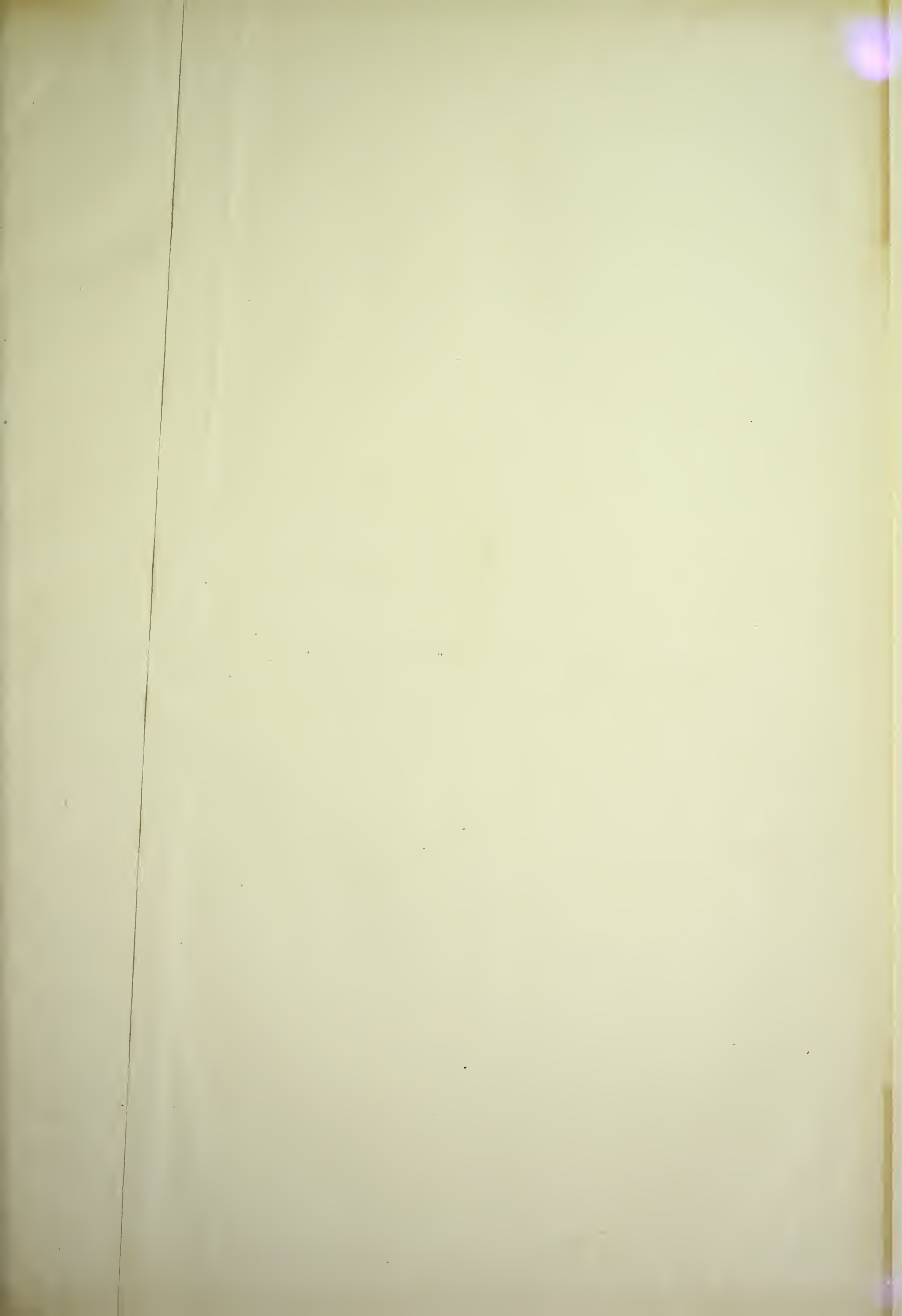


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THE PACIFIC RURAL PRESS

CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 1.

SAN FRANCISCO, SATURDAY, JULY 5, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Irrigation in Arizona.

We are glad to have an opportunity to speak again of the directness and practical character of the work done at the Arizona Experiment station and the value of the popular publications which are made of the results. The suggestions offered of proper methods under the very peculiar agricultural conditions which prevail in the Territory must be very helpful to settlers endeavoring to prosperously establish themselves, and as considerable areas of California have a sort of Arizona character, the same suggestions are helpful to our people. Perhaps one reason why we particularly like the Arizona station publications is their intense local flavor. They are evidently growing up with the country and serving its interests, as other publications following less original lines and conceptions could not do.

The last issue of this series gives the results of four years' experiments with the use of water for different crops. The investigation is still in progress, but outlines of results need not longer be delayed. We give on another page of this issue the first of a series of chapters which will enable our California readers to compare their practice with the Arizona experiments. Prof. A. J. McClatchie, who has conducted this work and who writes the report of it which we are reproducing, is an experienced observer and accurate with records. It may be necessary for our readers to remember this when they read of the large amount of water which has been used with good results on the "clayey, gravelly



Irrigating Young Strawberries Through Endless Ditches.



Irrigating Young Strawberries Through Shallow Furrows.



Irrigating Young Potatoes Through Furrows.



Watermelon Field, Arizona Experiment Station; Ten Irrigations During Season.

loam, underlaid with a stratum of gravel," which constituted the soil upon which the trials were made. Though the soil in its upper strata is often fine and retentive, as soon as the water reaches the gravel substratum it is speedily lost to all except very deep-rooting plants, which can follow the water to the still lower clay stratum, where its farther escape is prevented. This must be remembered when the reader notes that 5 or 6 feet depth of water was used with good results on strawberries, cabbage and onions, without water logging and ruining the plants, as that much water certainly would ruin them in some parts of California, and, in fact, anywhere, perhaps, with a more retentive soil. The details, which will appear in our reproduction of Prof. McClatchie's writings, will be found exceedingly interesting.

The pictures on this page show how the water was applied to the several crops as noted under each engraving. The photographs indicate the use of a larger stream than is usually employed for such small cultures, also a much higher ridging of the land carrying the plants. In California usually greater success is secured by clinging more nearly to a flat culture, leaving the land in better shape for cultivation and obviating the loss by evaporation from water-settled surfaces. It appears, however, that in Arizona, at least with such soil as was used in these experiments, the very frequent use of water was necessary.



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E. J. WICKSON. Horticultural Editor

San Francisco, July 5, 1902.

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The Week.

We go to press one day earlier than usual this week to allow for the mailing of our large edition before the Glorious Fourth, so that our employees may have full swing for their patriotic fervor. It looks as though it would be a good Fourth of July year this year. The observance of the national holiday varies in degrees of intensity, though it is always loud and deep. Influences which are difficult to measure and describe certainly move the people toward unusual demonstrations and determine the character of the Fourth of July observances. Though it does not appear that this year will strike the highest key in patriotic sounds it promises to be a good, strong and full note, and we can but express full sympathy with the deep feeling which will thus find manifestation. Preparations for celebrations have been widely made in the smaller cities and towns, and all through the country and the picturesque resorts of mountain and coast. Where unusual multitudes are summering this year, there will be grand outburst of oratory and pyrotechnics. Let the day have its full deserts. Let old and young forsake ordinary occupations and rejoice that they are Americans and sharers in the blessings of the old Declaration which has accomplished so much for mankind and for the world.

Holiday week has its usual influence on trade, which is rendered somewhat disconnected and broken. Many are deserting the markets for several days. Still the sensational reports of injury to crops in the central West are producing a sharp effect here. Options for wheat are on the upgrade and are firm as we go to press. Spot wheat is fully 50 cents higher per ton, but little is doing. One cargo has gone out this week and only six cargoes for the month of June. Barley is barely steady; it has been weak, but is recovering. Oats are demoralized and values unsettled. Corn is quiet and unchanged, lacking firmness. Rye is dull at old figures and there is nothing new in buckwheat. Bran is held firm; there is only a fair supply and it is held in few hands. Small sales have been made up to \$19.50—higher than feed barley. Other millstuffs are unchanged. Hay is dragging with heavy arrivals and light demand. People say they are afraid to buy before the 4th because of fires. It is just this way every year. Beef and mutton are unchanged; heavy hogs are higher. Butter is as a rule slow, though strictly fancy in a small way sells at pretty firm figures. Eggs are accumulating; many are poor in quality and, not being fit to store, are selling at cut rates. Cheese is firm, light supply and fair

demand. Poultry is slow, except for fine young, which sell well. Common old hens are neglected in favor of Eastern stock, which is larger. Potatoes are temporarily firm owing to trouble in getting them to market while so much fruit is coming down the river. Onions are steadily held as though by concerted action. Fresh fruits are in heavy supply and prices very low unless of exceptionally good quality. Canners are taking much common stuff at their own figures. Choice basket peaches are selling high. Citrus fruits are inactive though a few choice lemons are selling well. Dried fruits are beginning to sell. 'Cots are in demand to cover short sales and Early Northern 'cots have sold up to 6c in the sweat box, while futures are placed at 5½c. Prunes are quoted at 2½c in bulk for Santa Claras; others ½c less. The nut situation is not clear yet. Hops are firm and some contracts at stiff prices. The wool market is nearly clear of desirable stock and is strong.

A very satisfactory convention in the interest of co-operation was held in Oakland last week. It was called by the Rochdale co-operators, of whom there are about forty local organizations in this State, and invitation was extended to other co-operative bodies. The result was an assembly of very progressive and earnest men and women, representing our fruit exchanges and other organizations for self-help in production and marketing. Stirring addresses were made on the general subject of co-operation and interesting figures presented on what had already been accomplished by it. The importance of local units in all plans for wide co-operation and the superiority of affiliated local societies over anything that can be had by a general convention plan of organization was clearly made out. It was decided that the California societies should be represented in a general co-operative convention to be held this month in Manchester, England, and Prof. D. T. Fowler of the agricultural department of the State University was chosen as a delegate. Prof. Fowler will not only attend the convention, but will undertake to make the products of California co-operative communities better known to the central purchasing agencies of the large English and European co-operative stores. This is an undertaking which has wide possibilities of extending the demand and making more direct the traffic in California products in large consuming countries.

Advices from the grasshopper sections are on the whole encouraging. There is sharp injury being done in small areas here and there, but nothing at all on the scale which was apprehended. Some threatened places which armed themselves for conflict report the enemy in scant numbers, and it is to be hoped that the great flood which was predicted may turn out to be only a little shower after all. It is generally that way with grasshoppers in California.

Baron Max Oppenheim, imperial counselor of the German Legation at Cairo, visited the agricultural department of the University last week, and had a long conference with Profs. Hilgard and Wickson concerning the operations of experiment stations and their relations to the development of new agricultural regions. This matter is of particular interest to Baron Oppenheim, because he is a leading promoter of the railway which it is proposed to build under German auspices through Mesopotamia and Arabia to the Persian gulf, to bring again to industrial life that abandoned country. Railway transportation and irrigation are essential to this accomplishment.

Distressing losses of stock from turning them into rank sorghum are again reported from the San Joaquin valley. It is strange that people do not learn the danger of this. Ever since the growth of this plant began in that region, which is about a quarter of a century, cattle have been quickly lost. Recently, as sorghum feeding has increased, the losses have naturally increased. We have published all that is known about the reason for the occasional disasters. Most careful investigation shows no specific poison, but the occurrence is like poisoning, for cattle begin dying in less than a quarter of an hour and die in numbers. The cause is a mystery, but the avoidance of the evil is clearer. Feed slowly at first and do not turn cattle at once from other feeds to rank sorghum.

QUERIES AND REPLIES.

Irrigating Alfalfa.

TO THE EDITOR:—It is my intention to put in a gasoline engine and pump in order to get water to irrigate twenty acres of alfalfa. How much water is needed, say, to irrigate (flood) twenty acres in three days, laid out, of course, in suitable checks of about one acre apiece? Also, are there any figures as to how many gallons a pump should throw to do that work? I can get all the information concerning the quantity needed to irrigate trees or berries or vegetables, in fact anything in rows, where a small, but constant flow of water is needed; but as to flooding alfalfa it seems nobody knows anything about it, not even dealers in engines and pumps. Please let me have the information. Do you know anybody who practices irrigating alfalfa with an engine and pump?—READER, Merced.

There is such a difference in practice in the application of water to alfalfa that it is almost impossible to state what amount would be considered satisfactory in any one case. Of course, the amount depends very largely upon the character of the soil, and retentive soils require much less than open, coarse soils. Some alfalfa growers, for instance, consider 3 inches depth of water enough for one irrigation, and some on coarse, loose soils, apply two or three times as much at an application. You will have to arrive at a conclusion for your own soil according to the best judgment you can form from observing the growth. Now to figure how much water in gallons you need to irrigate a certain area you begin with the fact that 1 inch of depth per acre, or one acre-inch, as it is called, equals 27,152 gallons. Now to irrigate twenty acres to a depth of 3 inches would require 1,629,120 gallons of water. To throw this much water in three days you would evidently need a pumping plant which would yield 543,000 gallons per day. After you get inches of depth translated into gallons in this way it is very easy for you to calculate what gallon output you must require of your pumping plant. Alfalfa is being grown with pumped water at many points in California.

Overflowed Asparagus.

TO THE EDITOR:—A grower of asparagus on the river who has had his field under overflow since last winter finds that the roots are all right now that the water has been pumped off and their shoots are appearing. He thinks he ought not to cut any this year, but allow the plants to make top growth to help the roots for next spring cutting. Do you think it would hurt the plants to do a little cutting?—READER, Sacramento County.

We are glad that it is demonstrated that the roots of asparagus can endure long submergence without injury. The question as to whether the roots would be injured by the cutting of the shoots at this time of the year or not must be settled by observation and experience. We see no reason why a certain amount of cutting cannot be done providing the product can be profitably used at this time of the year. Might it not even be possible to get better prices for very late asparagus, and if that were the case why could not part of the plantation be held dormant by submergence to meet such profitable trade? As for the effect of late cutting on the plant in our California climate we do not see why it should be injurious. We have such a long growing season that would be ample time for a little cutting and very thrifty and satisfactory top growth of the plant afterward, before the growing season should be closed by frost. We cannot see what difference it would make to the plant, providing the submergence did not injure the roots at all, to make its top growth in the fall instead of the summer. It is probable, however, that a late growth like that might make the roots later in starting the following season. Usually those growths which end their activity earliest in the fall start earliest in the spring. This would have to be considered in connection with plans for next year.

Arsenic Spraying.

TO THE EDITOR:—Advise me if Prof. Kedzie's arsenic spraying solution (mixed with four pounds of lime and one pint of solution to forty gallons of water) is safe to spray growing fruit, or will it kill chickens which run through orchard?—GROWER, Watsonville.

The Kedzie solution is still all right to use for late ripening fruit, but early fruit is too far advanced to make it perfectly safe to the consumer. It is, however, altogether probable that chickens feeding in

the orchard would not be injured by this spray as applied to trees and fruit. Experiments have shown clearly that in the East where the orchards are undergrown with clover the spraying with Paris green and other arsenites did not drip enough poison to be injurious to horses and other animals feeding on this clover. Feeding herbage of this kind would seem to be a great deal more dangerous than such eating as chickens would be likely to do upon fallen fruit.

The Russian Thistle.

To THE EDITOR:—Can you give me information about the plant I send? It is something new in this section of country, northeast of Brentwood, Cal. I fear it is going to be a public nuisance, and would like to know the name of it, also if you know whether it is likely to become a nuisance or not? This weed grows in a large round bunch 2 or 3 feet through it, and has sharp points all over it. It grows in hot dry weather, and when ripe the wind will blow it, rolling and scattering the seeds as it goes. Have we a law to compel owners of land to destroy troublesome weeds?—OSCAR SMITH, Brentwood.

The plant is the Russian thistle, a plant of such ill fame and evil deeds that we shall try to help all our readers to recognize it at sight. The Russian thistle has been for many years a destructive weed in the Caspian sea region of Russia, so serious in wheat, barley and flax that it is claimed that some lands were abandoned. The weed was found in South Dakota in 1873, having been brought from Russia in foul flax seed. Its spread in the central West was very rapid, and about eight years ago it found its way to California, appearing in widely distant parts of the State, evidently having come by rail and finding lodgement beside the car tracks. It is now established in several counties and is going onward. It should be checked in every possible way. The accompanying pictures make attempt at description unnecessary.

As for what can be officially done to arrest its progress it may be said that there are no laws in California which apply by name to the Russian thistle, but there are laws under which the weeds can be eradicated. Section 28 of the County Government Act of March 14, 1883, also reaffirmed by the Act of March 31, 1891, and again in 1893, ordains that Supervisors have the power to provide for the destruction of gophers, squirrels, other wild animals, noxious weeds, and insects injurious to fruit trees. This is the law under which work must be done at the present time wherever the thistle appears outside of incorporated towns.

Successful treatment in the field will be to prevent the plant from going to seed so far as possible. Cutting and burning early in the spring is desirable wherever possible. Even after the plant has become mature and started on its own account as a "tumble weed," it should be pursued and burned.

In order to prevent the large weeds from rolling, the Russians plant belts of sunflowers which stop the plants, collecting them in high banks, and they are then burned. Belts of trees, or any other windbreaks, answer the same purpose, as do fences. This, of course, is expensive, on a large scale, and there is no doubt that the time to fight the thistle is when it can still be plowed under. In Dakota the farmers harness ten or twelve horses by long ropes to immense bars of wood, and drag very

large piles of the weeds into heaps to burn. Any work of this kind should be followed by burning the stubble, and by two plowings before another crop. Our system of managing orchards gives us every advantage in keeping

under pear and apricot trees have fallen off?—SUBSCRIBER, Lompoc.

The pears are half black with pear scab, and the apricots are stricken with shothole fungus. Both these appearances could have been prevented

whether it is really preventable or not.

An Eastern Grape Fungus.

To THE EDITOR:—Herewith I enclose you a leaf of a resistant vine (Riparia). Can you tell me what is the trouble with it?—READER, Fresno County.

The grape leaf is affected by a fungus known as *Cercospora vitis*. This is not a common trouble in this State, and it may be restricted to the Eastern species. It will, however, do to watch. Its spread can be checked by the use of the Bordeaux mixture.

WEATHER AND CROPS.

Report of the U. S. Weather Service for the Week Ending June 30, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Continued warm weather has been beneficial to grain and fruit. High winds at the close of the week probably caused some damage to fruit. Grain harvest is progressing in all sections. The yield is fully up to expectations and the quality excellent. Grasshoppers are not causing much damage to grain. Fires have destroyed several hundred acres of grain in Butte county. Hay baling is progressing and the crop is above average. The second crop of alfalfa is being harvested. Hops are doing well. Deciduous fruits are ripening rapidly and there will be a heavy yield of nearly all varieties. Oranges are dropping in some localities. Grapes are in excellent condition and a large crop is expected. There is a scarcity of labor in the fruit districts.

COAST AND BAY SECTIONS.

The weather has been warm and clear during the week and all crops have advanced rapidly. Grain harvest is progressing in many places and good crops are the rule, except in some of the southern districts. Haying is nearly completed. The crop is large and the quality excellent in the central and northern counties, but light in the south. Hops, beans, beets and corn are doing well. Grape vines are very thrifty and give promise of a heavy yield. Deciduous fruits are ripening rapidly and the yield is generally above average. Orchardists are unable to procure sufficient help to gather the fruit, even at higher wages than usual, and in some places fruit is decaying on the trees.

SAN JOAQUIN VALLEY.

The weather has been slightly cooler than during the preceding week, but favorable for all crops. Grain harvest is progressing. In some sections the yield of wheat and barley is better than anticipated and the quality is excellent. Grasshoppers are still causing some damage in places, but many localities have not yet been visited. The third crop of alfalfa is lighter than usual, but of good quality. Haying is nearly completed. There is a large acreage of Egyptian corn in Tulare and Kern counties. Green feed is plentiful in most places and stock are in good condition. Apricot drying and canning are progressing. All deciduous fruits except pears are in good condition and maturing rapidly. Vineyards and citrus fruits continue thrifty.

SOUTHERN CALIFORNIA.

Abnormally hot weather prevailed at the beginning of the week, followed by cooler, fair weather, with fogs along the coast and light showers in the extreme south. It is reported that grapes and early deciduous fruits were slightly injured by heat. Apricots are ripening slowly, but will be large and of good quality. The yield will be less than average. Other deciduous fruits are in fair condition, but maturing slowly. Walnuts and citrus fruits are doing well. Haying is nearly completed and baling has commenced. Grain harvest is progressing slowly and the crop is generally light. Sugar beets and beans are in fair condition.

EUREKA SUMMARY.—All crops are healthy and making good growth. Some Humboldt cherries are in market. Strawberries are plentiful. Haying is progressing rapidly.

LOS ANGELES SUMMARY.—Very hot weather first of the week affected peaches and apricots in some localities, but fog and cloudy weather the latter part were beneficial.



The Russian Thistle as a Tumble Weed.



The Botany of the Russian Thistle.

Fig. a, branch of mature plant, natural size; b, seedling about two weeks after germination, natural size; c, flower detached from axis and remaining suspended by minute hairs, in the ordinary inverted position on a rolling plant, enlarged three diameters; d, flower viewed from above and in front, showing the calyx lobes connivent into a cone-shaped body, and the large, membranaceous, spreading wings, enlarged three diameters; e, seed with flower parts removed, enlarged five diameters; f, embryo removed from the seed, enlarged seven diameters.

the plant in check in the fruit districts if the highways are kept clean as they should be. Sheep and goats feed freely on the plant and can often be used to advantage in cleaning it up.

Pear Scab and Apricot Shothole.

To THE EDITOR:—Will you tell why the small fruits which I have picked up

by winter use of the Bordeaux mixture. But it is not sure that either of these fungi caused these specimens to drop. There is always a certain amount of dropping at this time of the year, and it may be due to several causes. This happens with healthy trees as well as diseased trees, and no one knows how to prevent it, nor

Agricultural Review.

ALAMEDA.

A VICIOUS ANIMAL.—Oakland Enquirer: Felipe Amores and Matt Story, two vaqueros, had an experience last Thursday while driving a vicious bull into a pasture through a gateway on the Bartbold ridge, 8 miles from Livermore. The animal became furious, and wheeling around suddenly charged the horse ridden by Story, goring the animal in the ribs. The onslaught was so sudden that the horse was thrown upon the rider, whose leg was caught and broken at the ankle. At this juncture the other vaquero, Amores, threw his lasso over the bull's horns and threw it to the ground. The horse died on the spot, and Story, the injured man, was taken to the Smith ranch.

ASPARAGUS SHIPMENTS HEAVIEST ON RECORD.—Oakland Enquirer: The asparagus season, which is about to close, there being but little more grass standing, has been the most remarkable in the history of the industry. There have been larger Eastern shipments during the season than there have been in any two previous years, and so much of the asparagus has gone to the Eastern market that there has been a continuous scarcity in the local markets. As a result the grass has brought from \$1.75 to \$2.25 throughout the season, while in the seasons heretofore it has gone down as low as 50 cents. The crop was large and of exceptionally good quality. Exactly what the output of the Hickmott Canning Co. was is not known, but it is understood to be somewhere near 3,000,000 cans.

BUTTE.

BIDWELL RANCH LAND SELLING.—Chico Enterprise: The excellent quality of the Bidwell lands appeals at once to the Eastern man who comes here to buy a small farm and make his home in this favored locality. Agent B. Cussick, who has been handling this choice tract since its sub-division, has sold a great deal of land and he is still selling it off rapidly. One of the most recent purchasers is R. H. Lynn of Pennsylvania, who bought 46 acres in the sixth sub-division, and we are informed that he proposes to very soon commence the erection of a neat home thereon. Mr. Lynn proposes to engage in diversified farming, including the planting of alfalfa and garden stuffs.

RAPID STUMP PULLING.—Oroville Register: Charley Crane, who was operating the big stump puller owned by N. B. Crane of this town, states that while at work on the Nimsheew reservoir he averaged over 350 stumps a day, or 10,000 stumps in all. The trees were pine, cedar, fir and oak, and big or little, all came when the puller was hitched to them.

EL DORADO.

SCARCITY OF ORCHARD HELP.—Lotus Correspondence Nugget: The orchardists here and at Coloma are very much alarmed over the probable scarcity of hired hands to help handle the coming fruit crop. At present no one can be found. Labor has got to be had or else half of the crop will go to waste.

FRESNO.

CANNERY PRICES FOR APRICOTS.—Democrat: The Griffin & Skelley cannery opened on apricots with a force of 150 hands, but the run on apricots will be comparatively brief this season, for the reason that there is a large supply of canned apricots in storage. A few days ago the company purchased apricots at \$20 per ton, but it has about all that it cares to handle and is not seeking more, though when choice fruit is offered it pays about \$17.50. Last year at the opening of the season as much as \$24 was paid, though the prices soon dropped to \$20. Though the quantity is exceptionally abundant, the quality is not so good, owing to the fact that the growers left too many apricots on the trees. It breaks the heart of the ordinary orchardist to thin his fruit, especially when he has experienced two or three poor years, in which the yield has been exceedingly small. Had the trees been more thoroughly thinned this year the quality would have been much better and the price correspondingly higher.

GLENN.

APRICOTS ROTTING ON THE TREES.—Willows Journal: The fruit crop in the orchards near Elk creek is the heaviest in years, and the scarcity of labor will cause much of the fruit to go to waste. In one large orchard, at least 20 tons of apricots are rotting on the trees, and although the proprietor is offering high wages, he can get only a few men to help pick the fruit.

KINGS.

ARIZONA CATTLE POOR AND CHEAP.—Hanford Journal: Fourteen carloads of cattle from Arizona arrived in Hanford

Sunday. They were taken on the Southern Pacific to Alameda, where they were turned out on the range. The cattle belong to Mr. Pinkerton. They are very poor, and unless they get on good pasture many of them will die. It is reported that stock can be bought very cheap in Arizona on account of scarcity of feed.

WHAT A BUYER SAYS OF HOG RAISING.—N. W. Hammond, a well-known stock buyer, says if those who are raising any kind of stock for the market would keep their stock until more nearly matured, and then have them well fattened before put on the market, they would realize more money than they now do. Especially is this the case with hogs, as those that weigh 200 pounds and upwards are worth more per pound than those of a less weight. It would seem that stockmen who could afford to keep a pig until it weighs 160 pounds could afford to keep it until it would weigh 200 or 240 pounds. It is a conceded fact that alfalfa hay that is now selling for \$5 a ton on the market will realize the grower \$7.50 a ton if put into a beef animal. The same is true of grain. Grain that is worth 75 cents on the market is worth \$1 if put into fattening hogs. This fact will be seen by watching the men who raise stock especially for the market. You will find that such men never have hay or grain to sell, because they realize more for it than the market pays by putting it into stock to fatten for the market.

LOS ANGELES.

LIGHT STOCKS OF CITRUS FRUIT.—Times: The orange market is getting into a small corner. Sixteen thousand cars have been shipped, including the lemons. There are not to exceed 1500 carloads left in Southern California. These are about half lemons and half oranges, and the oranges are mostly Valencia lates. The summer lemon crop is running light and there will be less than 750 cars of this fruit, unless the fall crop in September and October turns out larger than that now being gathered is doing. After this date last year over 3000 carloads of oranges and lemons went East out of Southern California.

NAPA.

HAY BALING RECORD.—Register: Jasper Patrick and his crew of hay balers passed through town this morning with their outfit for the Burrell ranch, where they have 500 tons of hay to bale. They have been working for the Miller Bros. of Carneros, and while there haled 186½ tons in six days, an average of thirty-one tons a day.

ORANGE.

LIGHT HONEY CROP.—Prospects are that there will not be more than four or five carloads of honey in Orange county this year. The bee men in some sections are already buying sugar to feed the colonies in the hope of carrying them over another season. The shortage from last season's output is estimated to be over 200 tons.

SAN JOAQUIN.

FIVE HUNDRED AND THIRTY-FOUR DOLLARS AN ACRE FROM LOGANBERRIES.—Lodi Sentinel: The Loganberry season is about over and P. Sturla's hooks show that he has sold \$534 worth of berries from one acre. Most of the berries were shipped to San Francisco; the remainder were handled by Anderson & Friedberger, the independent fruit men. The greatest expense is for the picking, which is not very heavy. Small baskets sold at the opening of the season for 10 and 12c, later bringing 4 to 6c.

FIRST SHIPMENT OF DRIED FRUIT.—Mason Bros. shipped the first dried fruit this season Tuesday, June 24. It consisted of 2100 pounds of apricots to a San Francisco firm. The fruit brought 6½c.

BIG PROFITS FROM A CHERRY ORCHARD.—Stockton Independent: Mrs. M. A. Podesta owns five acres of cherry orchard a short distance from this city, on West's lane. The five acres have yielded 3000 boxes of cherries, which have been sold at an average of 85 cents per box. This gives a gross revenue of \$2550 from the five acres. The net cost of picking, packing and marketing is estimated at 2 cents a pound, or 20 cents a box. The net returns from the orchard were, therefore, \$1950, or \$390 an acre. One cherry tree yielded 150 boxes of cherries, which sold for \$125. The cherries were all marketed in Los Angeles.

RECEIPTS OF LOOSE HAY ARE LARGE.—With considerable loose hay coming into the city at present the local hay market has weakened slightly and all grades are about 50 cents a ton lower than ten days ago. It is too early for new baled hay, as it has not matured sufficiently to put up. Some make the mistake of baling their hay before it has passed through the sweat stage, with the result that it is not of the best quality and brings less than it would had it been properly cured.

There is a lot of all kinds of hay being cut at present and most of it is very fine, as there was not sufficient late rain to damage any of it to any extent. With good care in sweating it in the stack and proper haling, most of the hay will be of fine quality.

SANTA BARBARA.

RUSSIAN GRASS THRIVES.—Lompoc Record: A sample of bromo or Russian grass, grown on the McKay mesas, is on exhibition here. Mr. McKay has several hundred acres in this grass. The sample was taken from the open fields and measures in height 4 feet, with 160 stalks produced from a single seed. The many horses engaged in harvest work on the ranch feed solely on this pasture, which Mr. McKay believes surpasses all other grasses for sandy or light lands.

SANTA CLARA.

CHERRIES IN CLUSTERS.—San Jose Herald: A. P. Hill has taken a series of pictures of the S. Di Fiore cherry orchard, which will be exhibited at the world's fair at St. Louis. The pictures give some idea of the scenes at the ranch. The orchard is situated about 3 miles out on the Stevens Creek road, the twenty acres devoted to cherries being the part that has become the center of attraction of the neighborhood. The trees are planted seventy-four to the acre, which makes 1480 in all. They are ten years old, in that time having attained a wonderful growth. The yield has been fairly good in other years, but this year it surpasses anything that has been experienced. The branches, some of them 30 feet in length, are a solid mass of fruit and bowed down by the weight of it until the ends touch the ground. The effect is that of a field of large green tents, all of which are over 20 feet high. The cherries are of the Royal Ann variety, and from under the trees the great bulk of the fruit can be seen, golden and red, and ready for the pickers. A force of men with 18-foot stepladders is moving through the field, stripping the branches. Before their work was commenced, however, pictures had been taken that the story of the remarkable yield might not be lost.

ORGANIZATION OF BEE KEEPERS.—A preliminary meeting for the organization of an association of bee keepers of Santa Clara county was held at San Jose Thursday, June 26th. There are over 300 persons in the county keeping bees and it is proposed to hold meetings several times a year and report results. After some informal discussion an adjournment was taken until July 5th, when a permanent organization was effected.

PROFITS IN CHERRIES.—Gilroy Gazette: D. C. Vestal, a pioneer orchardist of the valley, whose place is on the Rerryessa road leading out of San Jose, has made a record harvest in a cherry tree crop. From one Black Tartarian cherry tree he has just finished taking a total of 1990 pounds of fruit. The cherries of this tree he sold at the rate of ten cents per pound in Eastern markets, making the gross receipts \$199. From another tree of the Black Bigereau variety, Mr. Vestal has taken 1200 pounds of choice fruit. It is believed that this is the largest crop ever taken from a single cherry tree in the county, if not in the State.

SANTA CRUZ.

ORCHARD SALES.—Watsonville Pajaronian: Several orchards have been sold during the past week. Prices averaged better than last year. Fruit handling firms have not purchased apple orchards this season as extensively as in the past. Two of the largest packing firms in this valley have no orchards this year that were not contracted for by them last year. They were waiting to know more of the crop here and elsewhere, and of market conditions, before they make any crop investments. Several orchard crops are being offered for sale at auction. Judge Bockius has followed this method for years in disposing of his fruit crop, and he has found it satisfactory to himself and to the purchasers. The sales at auction are made at a time when buyers can very closely estimate the amount of the crop, and when a fair line on the season's fruit selling values is obtained.

SOLANO.

PROFITS OF ALFALFA IN DAIRYING.—Dixon Tribune: Several patrons of Dixon creamery are now realizing from experiments made in the production of alfalfa. E. D. N. Lebe is irrigating in a limited way less than two acres. Each crop sells for \$8, and Mr. Lebe has made three cuttings this season. Two more crops, and probably three, will be cut from this land this year. There are a number of patrons of the creamery who are realizing \$4 per cow per month. It is admitted that two cows can be kept on every acre of irrigated alfalfa, which shows the handsome sum of \$72 per acre for only nine months' use of the cows.

SONOMA.

ONE FORTUNATE HAY PRODUCER.—Santa Rosa Press-Democrat: William P. Slusser of Mt. Olivet is feeling very jubilant over the fact that he had a splendid crop of hay on his ranch and that it haled up 250 tons. More than this, Mr. Slusser has sold all his hay at a good figure.

NEW PRESERVE WORKS.—Petaluma Courier: The new preserve company is busily engaged receiving and storing cherries for future packing. Over fifty barrels have been taken in. The cherries are first put in water that has some chemical preparation dissolved in it. They are then left in the water until needed for further processing. The new plan of preserving ought to be a success. The cherries which have been in water for a week taste as if just picked from the trees in the cool of the morning.

STANISLAUS.

SIX THOUSAND WHITE LEGHORN CHICKENS.—Modesto Herald: H. W. Gray has 6000 chickens, young and old, on his place. They are all of the White Leghorn variety, and the choice hens command \$1.50 apiece.

SUTTER.

CONTRACTING FOR WHEAT.—Independent: We were told this week by a special agent for an insurance company that wheat buyers from the city were traveling through Colusa and Glenn counties contracting wheat at \$1 delivered at the nearest shipping point. We have heard of some contracts being closed in Sutter county at the same price in the field.

PLANTED SIXTY ACRES OF MELONS.—J. W. Ford, one of Tudor's prosperous farmers, has now in a thriving condition sixty acres of watermelons. Mr. Ford is an enthusiastic truck and stock farmer and is making a success of it.

HARVESTING OATS.—Sutter County Farmer: In the vicinity of Nicolaus quite a large acreage was planted this season to red oats and the bulk of the crop has already been harvested. The oats were of good quality and made a yield of from nine to sixteen sacks per acre, the sacks weighing about 100 pounds. Last Sunday the steamer came up to Nicolaus and took on board several thousand sacks which were marketed at \$1.05 per cental. Taking the cost of raising the oats and the yield, etc., it pays better than barley or wheat, and makes a change of crop, thereby benefiting the land.

TEHAMA.

A FINE ORCHARD.—Corning Observer: The Kraft orchard, northwest of Corning, will produce upwards of forty carloads of dried fruit this year. This orchard is now in full bearing. It is located on the choice bottom land along the south bank of Thomas creek. The apricot crop is fair. Almonds and prunes will produce an average crop. For some reason the pears did not set well and the yield will not be heavy. The peach trees are full of fruit and have had to be thinned a great deal.

HOPPERS DINED ON DRYING APRICOTS.—Red Bluff News: A few days ago the grasshoppers became quite numerous on a portion of grass-covered land on one of the ranches in Antelope valley, and to prevent them from going into the nearby grain, and to destroy them entirely, an order was given by the foreman to burn the grass. Bordering this grass land was a barren tract which had been cleared for fruit drying by some Chinese gardeners, and on the surface they had their trays filled with apricots. When the grass was fired, the hoppers moved before the hot flames reached them and settled among the apricots; as it was about their feeding time, they made a fruit diet, disposing of everything on the trays.

VENTURA.

THE BEAN CROP.—Independent: It is estimated that the bean crop in Ventura county will be 350,000 bags, compared with 575,000 bags last year. Much of the bean land went into beets. A larger bean acreage in Orange county will partly make up the deficit should the crop there turn out well. But lack of late rains may wipe this out.

OREGON.

HIGH PRICES FOR WOOL.—Ashland Tidings: Ten buyers attended the public wool sale at Shaniko one day last week. About 750,000 pounds were disposed of at prices ranging from 12½ cents to 15½ cents, the latter being paid by E. W. Brigham, representing the woolen firm of Whitman, Farnsworth & Thayer of Boston, for the first clip of the Baldwin Sheep & Land Co., amounting to 280,000 pounds. The growers are well pleased with the prices paid, as they are the highest reached in Eastern Oregon for many years.

THE POULTRY YARD.

Some Poultry Pests.

By DR. CHARLES F. DAWSON, Veterinarian of the Florida Experiment Station.

The poultry industry of the United States has reached tremendous proportions. The census of 1890 showed a poultry population of nearly 300,000,000. Other industries are less uniform in their distribution, as nearly everybody raises a few chickens. Some persons go into poultry raising on a large scale realizing there is money in it, and that to get the most out of it, they must provide proper food, large, clean and airy poultry houses and yards. Others go at it in a slipshod way, providing nothing and allowing the animals to raise themselves. Although there are some good reasons why poultry can exist and keep in good health, raised wild, the method is certainly unbusiness-like and in the main unprofitable. The fowls become wild, wander away from the premises, become the prey of other animals, are stolen, and drop their eggs in inaccessible places. From such poultry all we get is a few to sell, or to put up and fatten for the table. When we bring the poultry into a smaller compass, thus depriving them of having to scratch for a living, we undoubtedly produce a weaker strain, and tend to introduce diseases from which they would be immune in the wilder state. It is at this point, a knowledge of the business is requisite. Anybody can raise chickens wild; but that same careful attention and watchfulness is necessary in the poultry business as in any other, and it is, therefore, not to be despised.

LICE.—Undoubtedly the greatest bugbear to poultry-raising is lice. There is a saying, when you cannot find out the trouble with poultry, clean up the houses, nests or coops and treat the fowls for lice. There are a large number of species of parasites affecting poultry, but space limits us to a consideration of two or three of the more common ones. First, and most generally important is the red mite (*Dermanyssus gallinae*). It occurs on poultry, pigeons and house-birds. It gnaws the flesh and sucks blood. When fasting it is yellowish; it is red when filled with blood. During the day, as a rule, it hides in cracks and corners and at night swarms upon the fowls, sucking their blood and causing them great annoyance and loss of rest. The younger the animals, the greater is the damage and suffering. Other animals, such as horses, and even man are attacked. In horses it causes great irritation, resulting in a mange-like disease of the skin with loss of hair from the affected areas. This parasite is very persistent and vigorous measures will be necessary to destroy it. It can be eradicated by a thorough application of hot carbolic acid solution (one of acid to twenty parts of water) to all parts of the interior of the house, including the floor, the removal and burning of nests, and by a thorough whitewashing.

There are five species of lice commonly found upon fowls. They are different from lice found upon hairy animals, and are not bloodsuckers. They subsist upon the dandruff which collects upon the body and are much alike in their habits, although quite different in shape and size. They are all quite small, varying in size from $\frac{1}{10}$ to $\frac{1}{8}$ of an inch in length. They multiply with great rapidity, one individual producing over 100,000 in three months. Chicken lice may not actually kill, but by their great numbers so annoy the birds that loss of rest and sleep causes ill-health and general unproductiveness. They are especially annoying to young chickens. They seem to prefer the dry scurfy skin of chickens already in bad health to the moist skin of the healthy ones. Chickens infested with lice are uneasy and restless. They constantly peck at the body, and scratch, shake and frequently dust themselves. Lice may be found upon them by separating the feathers, especially about the neck and head. The lice may also be found about the nests, floors or any part of the hen house.

In treating for lice the fowl as well as the house must receive vigorous attention. Lice upon fowls may be killed in two ways. One is the application of some substance that will poison the lice; the other is the application of a substance which will destroy the lice by suffocating them. In the case of old fowls sulphur ointment may be rubbed, in small quantity, upon the neck, head, vent and under the wings. Upon the thin skin of young fowls only bland substances are permissible, such as olive oil, cotton-seed oil or lard. Every poultry yard should have a large dust box, sunk in the ground and filled with pulverized plaster and ashes, to which sulphur or insect powder is added. This alone, if properly managed, would keep the fowls clear of lice.

To rid the poultry house of lice it is necessary to remove shelving, perches, nests, etc., and then to whitewash the entire interior with a wash to which chloride of lime (one pound to four gallons) has been added. Kerosene in emulsion, or free, makes an excellent insecticide for this purpose. All shelving and perches should be sprayed, washed with either of the above or scalded. The floor, if wooden, should be removed and similarly treated. If of dirt it should be thoroughly scraped and scalded, or given a sprinkling with one of the above insecticide solutions. The

scraping should be similarly treated or burned. A repetition of this process two or three times a year would keep the poultry house free of lice.

HEN FLEAS.—Another common pest in sub-tropical Florida is the hen flea (*Sarcopsylla gallanacea*), first mentioned in the United States by Judge L. C. Johnson of Gainesville, Fla. It's about the size, color and form of a flea, but, unlike the latter, does not hop. It frequents shady places under old houses, earthen floors and other dusty, untidy places. It cannot live in sunlight or upon wet ground. It infests young animals, chickens, turkeys, kittens, puppies, calves, colts and children; but may also be found upon the larger adult animals. The female buries itself in the skin of chickens, causing the formation of wart-like tumors, which may spread over the eyes or into the mouth, producing blindness and starvation. In very young animals death takes place early from the immense numbers. With so many hosts to live upon there is no wonder that this flea is so troublesome. From what is known of its habits, however, it can be attacked with some hope of success. The infested houses, including floors, roosts and nests, should be given a good wetting with whitewash, scalding hot, if possible. Dust the fowls with insect powder and treat the tumors with carbolic salve, or sulphur ointment. A solution of lysol, trikresol or creolin of 5% strength should kill the insect, and could be applied to the infested parts of the fowl. Scald out small coops and turn upside. Treat similarly all places where the flea is seen. Where possible keep the premises wetted down by means of sprinkling can or hose for several days, as the flea is killed by dampness and by sunshine.

THE FIELD.

What Can be Done With Johnson Grass?

NUMBER IV.—CONCLUDED.

It must not be forgotten that in order to properly produce this hay intelligent care and cultivation of the meadow is necessary. Any idea that a meadow once set may be cropped indefinitely without further treatment must be abandoned at once. To secure the best results, both in quality and quantity of forage, the meadow should be broken up at least every second year. If this thorough plowing is delayed longer than the third year the growth of the grass is greatly weakened by the crowding of the growing rootstocks or underground stems and the consequent checking of the growth of the grass. The meadow should be given a thorough plowing to a depth of several inches, and the land should then be harrowed until smooth in order to present a good surface for mowing. There need be no fear of destroying the meadow if this plowing is done in the spring, or in the fall where there is little danger from winter frosts. The vigor of the plants is greatly increased by this thorough breaking up of the matted stems, and the following crop will be even and luxuriant in growth.

The grass should be cut when the flower heads have begun to open. If cut at this time the hay made from it will be of the finest quality and there will be no danger from the ripened seed. The yield may not be quite as large per acre, but the quality will be better, and the grass will renew its growth more rapidly.

Some of the most successful planters in the Johnson grass region make a practice of sowing some other crop on the meadows when they break it up. Oats may be sown, and an early spring crop of good oat hay may be thus secured. The crop will contain some Johnson grass, but not much. The second cutting will be earlier if following an oat crop than if the grass be allowed to grow alone. Another practice which serves two good purposes is the sowing of cowpeas in the Johnson grass meadow when it is broken. This may be done at any time during the spring or early summer. The cowpeas will not only furnish excellent hay, but combines well with the Johnson grass hay as a feeding ration, but, as is well known, they also help to restore the fertility of the soil. Such a sowing is therefore especially desirable wherever meadows are established on the poorer soils. If the growth of Johnson grass is more rapid than that of the pea vines, and there is danger of the latter being choked out by the vigorous grass, the mowers should be run over the meadow with the bar raised high enough to cut the tops of the Johnson grass without injuring the pea vines.

Johnson grass is not of especial value as a pasture grass. Its growth does not begin until rather late in the spring and does not last after the first heavy frost of autumn. Throughout its range, however, it is grazed to quite a large extent during the summer and affords an abundant and nutritious pasturage. This is especially true in moist or irrigated soils where its summer growth is not checked by drought. All kinds of farm stock graze it well and thrive upon it. There is rather a widely prevalent idea that it can be killed by pasturing. The growth of the grass is much checked and weakened by close pasturing, especially if continued for several years in succession. This is due not so much to trampling and grazing as to the close matting of the stems in the soil, thus

literally choking the grass out. The remedy for this is to break up the land every third or fourth year, thus giving the stems a vigorous impulse to growth.

A few cases of cattle having been poisoned by grazing Johnson grass have been reported. These reports have been noted only through the papers, none having been made directly to this Department. Authentic details are rarely given in such cases, and very little weight can be given to these rumors. Since Johnson grass is closely related to sorghum, which is known to be poisonous under some circumstances, it would not be surprising if Johnson grass should also be poisonous under like conditions. Investigations have been conducted for several years to determine the cause of sorghum poisoning, but as yet without conclusive results. Neither sorghum nor Johnson grass is likely to be abandoned as a stock food, however, because of the infrequent danger from poisoning. In comparison with the great number of cattle fed or pastured on Johnson grass the reported cases of poisoning are extremely rare.

SUMMARY.—Johnson grass is a tall, vigorous grass, closely related to the sorghums, with a very strong system of long, jointed, underground stems, popularly known as roots. Each joint of this underground stem is capable of producing a new plant.

It is a native of the tropics of the Old World, and was first introduced into this country as a hay grass in South Carolina about sixty years ago.

It has spread rapidly throughout the entire south to the Pacific coast and thence north to British Columbia. It thrives best in rich, moist, alluvial or irrigated soil, where it is also most difficult to eradicate.

It is commonly spread by means of its seeds. They are widely scattered from hay cut after the seed has matured, and are often planted with seed oats. The seeds are unharmed by passing through the digestive tract of animals, and are thus widely scattered in manure.

The grass should never be allowed to ripen its seeds in meadows, fields, or along roads, fences, or railways.

It can be destroyed by hand labor—digging out the underground stems.

Under field conditions it is best killed by plowing fallow land during hot, dry weather. The stems are thus exposed to the heat of the sun and soon killed. The same result follows the action of severe frosts.

It can also be killed during the cultivation of a cotton crop by much extra hand labor.

Various chemical substances have been tried, but none have thus far proved successful and economical.

Johnson grass makes a very good quality of hay when cut while just in flower, and it may be profitably cultivated throughout the South for this purpose. Meadows should be broken up at least every third year to loosen the matted stems. It is not necessary to reseed meadows when thus treated.

Cow peas may be sown in the grass when it is broken in the spring. When broken in the fall, oats may be used with it. It affords good pasture during summer when treated in the same way as meadows.

THE IRRIGATOR.

Irrigation Methods in Arizona.

From Bulletin No. 41 of the Arizona Experiment Station, by A. J. McCLATCHIE, Agriculturist and Horticulturist.

Most irrigation is done in the region by one of two methods—through furrows, or by flooding. The furrows may be permanent or temporary. Plants, such as strawberries and small vegetables, that require the frequent application of small amounts of water, are by most growers irrigated through furrows that are more or less permanent. Some farmers break up by cultivation the crust that forms on the surface, while others simply hoe from the furrows and the intervening ridges the weeds that grow there. This method of irrigation should be resorted to only in the case of such crops and under such climatic conditions as make it difficult to irrigate by any other method.

Running water through temporary furrows that are cultivated up after each irrigation is to be preferred wherever practicable. Experience at the farm shows that this is the method by which all crops that can be so irrigated should be irrigated. The water applied penetrates the soil, and a smaller percentage is lost by evaporation than by any other method. Since the soil mulch formed by cultivation prevents the rapid escape of moisture, crops will need less frequent irrigation by this method than by any other. In irrigating by the furrow method it is important that the streams permitted to run in the furrows be small. Just enough water to cause the stream to creep slowly along should be turned down each furrow. The soil will thus become thoroughly saturated and little water will escape at the lower end of the field. The more slowly the water makes its way down the furrows, the better, provided it gets through during the time that irrigating water is available. If so large a stream is permitted to run in each furrow that the water reaches the lower end quickly, the sides are thus made less pervious,

and a large percentage of the water escapes at the lower end—water that would percolate into the soil, if it ran more slowly. For equalizing the flow of water into the upper ends of the furrows, straw or other similar coarse material will be found serviceable. If something is not used to prevent the washing of the soil, the tendency is for too much water to find its way down some furrows, and too little down others.

In the case of crops that cover the ground, such as alfalfa and grains, flooding is the method in general practice. In this region these crops are flooded by running a large stream of water between two ridges (commonly called "borders") thrown up with a plow, about 30 feet apart. Between these two ridges the water being applied spreads out into a broad, shallow stream that flows the length of the field. Waste ditches at the lower end of the field carry off water that flows from the ends of the lands. The first time a field is irrigated after sowing, and, to some extent, at later irrigations, it is necessary to impede the progress of the stream of water and cause it to spread over the whole surface, where, on account of the slope of the land, it is inclined to run in a narrow stream. This is done by throwing up across its course earthen ridges called "tappoons." If these tappoons are properly made, they will usually cause the water to flow where it is desired during several subsequent irrigations.

Before plowing unoccupied land, it is commonly irrigated by flooding. Experience at the farm shows, however, that a better way is to run the water through furrows made 2 to 3 feet apart, the distance apart depending on the nature of the soil and the length of the field. The more slowly the soil takes water, and the shorter the field, the nearer together the furrows need to be. At the farm these furrows are made with an adjustable three-shovel furrower, by means of which the land can be furrowed as rapidly as it can be ridged (bordered). Less water is required by the furrow method, less labor is required to handle the water and less water is lost by evaporation. Moreover, the whole surface of the soil does not become crusted over or baked as it dries, as does land that is irrigated by flooding. In some cases land may be hard to furrow, and flooding be therefore necessary.

In discussing the irrigation of individual crops in the pages that follow, the methods recommended are those that experiments at the farm indicate are best. Under different soil and climatic conditions, somewhat different methods would probably prove more satisfactory in many cases. However, it is believed that the general principles stated will apply under all conditions.

ALFALFA.—Alfalfa seed may be sown in dry soil or soil that has been previously irrigated, the latter method being usually preferable. It is better to have the soil in such condition as to moisture and tilth that the seed will germinate and the young plants appear without further irrigation being necessary. If the soil was dry when the seed was sown, or is not sufficiently retentive of moisture, or if, on account of the nature of the weather that follows seeding, the soil dries before the plants appear, water should be applied as promptly as practicable. The young plants must have plenty of water in order that a good stand may be secured.

The seeding may be done at any time during the period from October to March, inclusive, but the best times are October 1st to November 10th and January 15th to the end of February. The young plants, being sensitive to both low temperatures and excessive heat and aridity, a good stand can be best secured from the use of a given amount of water by sowing during the seasons above recommended.

After the young plants appear they should be given water frequently enough to keep them growing steadily. The application of water twice a month during the first three months is usually ample to secure a good stand. If sown during the winter season mentioned above, a light crop may be cut three or four months after sowing. After this, the application of water once a month is sufficient the first season. It is probably not economical to apply much water during November and December; but, beginning with January, water may be applied freely to advantage under the conditions existing in the region of the farm. Where water is available at all times of the year when needed for alfalfa, it will probably be better in most cases to postpone the free application of water until the first of February. Alfalfa being very deep rooted, water to the depth of 2 feet may be applied to advantage just before or during the early part of the growing season. After cutting the first crop, water may still be applied freely to advantage. After cutting the second crop the application of $\frac{1}{2}$ to $\frac{3}{4}$ foot of water will be sufficient for the production of each subsequent crop. But the amount that will be necessary to secure a good growth during the summer will depend very much upon the amount applied during the winter. If the field has been thoroughly wet during the latter season, two good crops can usually be cut without irrigation between the first and second cuttings; and in some cases a third, or even a fourth, crop can be cut. During the cutting season the best time to apply water is a few days previous to mowing. By

this method the new growth starts promptly after each crop is removed.

Alfalfa is especially adapted to a region with a fluctuating water supply, such as we have. When once established, the crop produced varies with the water applied, within certain limits. Water may be applied freely during the winter, when it is abundant, and withheld entirely during the summer. In fact, it will live during several average years without the application of any irrigating water. One field that has been under the observation of the writer has not been irrigated for over four years, yet many of the plants are still alive, a crop having been cut each spring the first two of the four years. Up to a limit of about six crops of two tons each the amount that a field of alfalfa will yield increases with the quantity of water applied. A total of 4 to 6 feet can be applied to advantage during the year. It is not easily killed by drought, but it thrives under and responds to irrigation as satisfactorily as does any crop grown.

BEETS.—The method of providing for the irrigation of sugar or garden beets depends upon the time of the year they are sown. If planted during the cool part of the year—November 15 to the first of March—they may be sown just as they are in regions where they are not irrigated, and furrows subsequently made for their irrigation. But if they are planted at other times of the year it is necessary to sow the seed along previously made furrows, or to make furrows as the sowing is done, since a good stand can not be secured during dry weather without irrigation. If the seeding is done during the cool part of the year, the crop will need no irrigation for a month or two. If the seed be sown during the warm weather of early fall, the crop will need frequent irrigation until cool weather arrives. If sown during the warm weather of spring, irrigation will be necessary during the entire period of growth. It is not usually advisable to sow either sugar or garden beets so late in the spring that they must be grown entirely by irrigation.

Beets do best sown during September, October, January and February. At whatever times during these months the seeding is done, the crop makes the most of its growth during the cool part of the year, and is grown with a comparatively small amount of water. During ordinary years the greater yield will be obtained with the same amount of water, the earlier they are sown after the coldest weather is past. The coldest weather of the winter of 1899-1900 occurred before Christmas, and the beets sown December 26 produced better results than those sown later and given the same amount of water. The year previous those sown during January produced a larger yield than those sown during either December or February and given the same amount of water. The same year a yield of nearly ten tons per acre was secured by the use of about 1 foot of water previous to sowing the seed, and of about .5 foot applied about two and one-half months afterwards—1.5 foot in all. This was in a fine adobe soil, quite retentive of moisture. To produce the same crop in a gravelly, porous soil required the use of nearly 3 feet of water.

CABBAGES.—After the plants have been raised in beds in the usual way, they are set along furrows that have been recently wet or through which water is run immediately after setting. In either case the individual plants are usually watered by hand as they are set. Plants are set out from September to November, inclusive, and during January and February, from seed sown a month or two previous. The furrows along which they are set are usually permitted to remain until the plants are well established. They are then cultivated up and made afresh for each subsequent cultivation. During the early stages of growth they are run near the plants, but later are run midway between the rows. Cabbages require a large number of irrigations.

While this crop is grown mainly during the cool part of the year, when evaporation is comparatively slow, yet the large part of the soil left unshaded by the crop, there being thus little check to evaporation therefrom, and the shallow rooting of the plants, thus requiring frequent irrigation, cause the need of a comparatively large amount of water to produce a crop. Also, in order to thrive, they need to have the soil kept moister than do many other crops. It will be seen that a total of 5 feet was applied during the sixteen irrigations.

CORN.—Corn is planted in soil that has been previously irrigated, in some cases with a combined lister and drill, but more usually along small furrows through which water has been previously run, and that are left for the first irrigation. Some farmers, however, drop the seed into each third or fourth furrow, as the land is plowed. When the corn has come up and the water applied previous to plowing and planting has evaporated, furrows are run between the rows for subsequent irrigation.

For table use, corn is planted during February, March, July and August. Field corn is planted during July only, in this region. When planted at this time four to six irrigations of about 0.4 of a foot each are necessary to produce a crop. All the water the corn grown during 1901 received was applied during the first two months after planting, no irrigation being needed while it is maturing its ears. It will also

be noted that the total amount applied was just about the same as that necessary to grow a crop of wheat.

COWPEAS.—Cowpeas may be planted in hills along furrows that have been previously moistened, and through which they are irrigated the first time; they may be sown in drills, and irrigated through subsequently made furrows; or they may be sown broadcast, disced in, and irrigated by flooding. Whatever the method of planting and irrigation, they require quite frequent irrigation.

The amount of water necessary to grow a crop of cowpea hay is so great, as compared with the amount necessary to produce the same amount of alfalfa hay, a nitrogenous forage of equal value, that its production can scarcely be profitable in any part of the Territory where the amount of water used is an object. The need of this great amount of water is due to the fact that the plant must pass through all of its stages from germination to maturity during the warm part of the year when the loss of water from the luxuriant foliage and from the soil is rapid. The same amount of foliage produced during the cool part of the year would not require much over half the amount of water needed during the summer. However, where the water supply is ample, cowpeas may be grown to advantage between two crops of grain.

(TO BE CONTINUED.)

ENTOMOLOGICAL.

The Grasshoppers.

TO THE EDITOR:—It seems to me that the several remedies suggested have some hitch which makes them impractical to a certain extent, provided grasshoppers are as ravenous here as I saw them in Missouri and Kansas in 1895-96, when they did not leave a vestige of green anywhere, but stripped vegetation in a week so as to leave a complete desert, even attacking the washing on the clothes lines. The poisoning with those innumerable hordes would have been of no avail, as it could not have been done rapidly enough, and is also too dangerous and laborious here, where not even the necessary help in harvesting our abundant crops can be secured. The burning of pasture lands and breeding grounds is also too dangerous, and I can not blame our stockmen if they protest against burning the dry grass and stubble.

I am surprised that, as far as I know, none have tried the ditching process, invented and initiated by my lamented friend, Prof. C. O. Riley, at Warrensburg, Mo., and which proved more successful than any other. To be fully effectual, however, it should be practiced before the insects are fully grown, so they can fly, and therefore it may be too late for this season, but deserves to be tried when similar visitations occur again. It consists in plowing and scraping out a ditch 4 to 5 feet wide and 2 feet deep, with perpendicular sides, across their line of march, into which the insects will tumble, but can not get out on the other side. Then, when the ditch is nearly full of them, pass a heavy roller over them and crush them. It would seem incredible what countless numbers can thus be destroyed in a few days. This is certainly a practical remedy, and it seems to me more feasible than any one I have yet seen advised, as every farmer has a team or two which can be spared for a few days. Of course, the bottom of the ditch must be scraped smooth and clean, and the sides kept perpendicular.

Let us hope that the infliction has about passed for this year, and that their natural enemies may increase and multiply. In Missouri they left the first week in June, leaving a desert behind them where they had not been thus trapped. The farmers were on the point of starvation, and seeds of corn, sorghum, turnips and beets were sent them gratuitously from all over the State, and even from other States. These were planted and sown and, as the fall was unusually late, nearly all the corn matured, and the largest crop of turnips, beets and pumpkins was harvested I have ever seen. It seemed as if the hoppers had manured the ground. But, of course, the fruit and grape crops were ruined for several years, and the evergreens all died, as they had stripped them of their bark and leaves. GEORGE HUSMANN.

Napa.

Fortunately grasshoppers are never a widespread scourge in California as in Kansas and neighboring States. They are always a local affair here, and their work always limited in area. It is bad once in a decade in spots, but never amounts to a plague. From the free printing which has been given to the subject one is apt to give too wide influence and injury to the insect. There is no present reason to think that it is likely to be a great affliction except to the few places where the pest appears.

The remedy which Prof. Husmann describes has not been overlooked. It was described with other resources in our issue of June 7, as were other barrier propositions, some of which are more easily secured. Prof. Husmann's recollections are, however, very interesting.

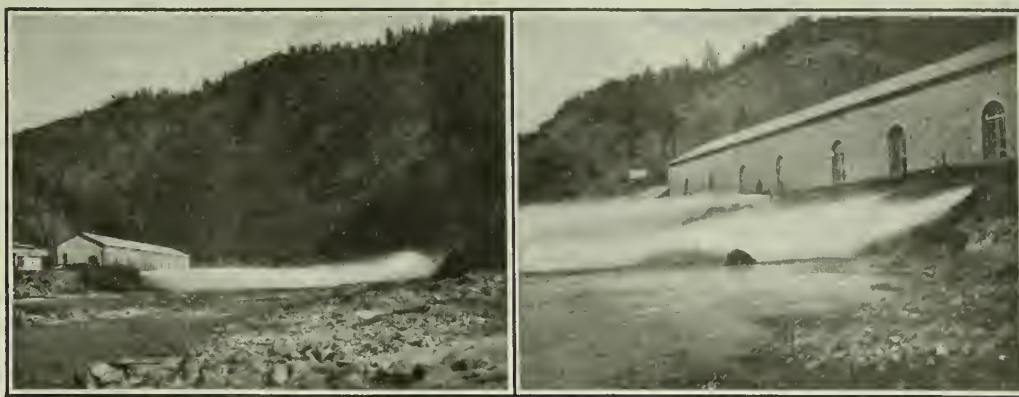
Electrical Transmission Again.

Because of the close relation of long-distance electric transmission to progressive agriculture we again allude to the large undertakings in California as described by Prof. Perrine in his paper before the New York Electrical Society:

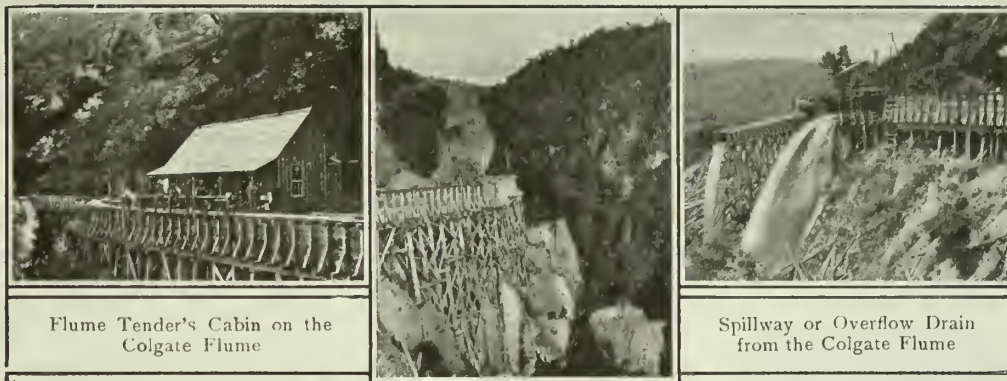
From the power house of the Standard Electric Co. at Electra, in Amador county, the lines lead through hill and dale, through the city of Stockton on to the little town of Mission San Jose, along the shores of San Francisco bay, a distance of 100 miles from the power plant. At this point the lines diverge north and south and are here controlled as a center of distribution for the system. Thence they run north about 28 miles to Oakland and south to San Jose, around the bay and up north to San Francisco, making a total transmission distance of 154 miles—34 miles farther than was originally contemplated, for the reason that originally it was intended to cross the hills direct to Oakland and cross the bay direct to San Francisco, but permission could not be obtained from the Government to erect poles and cross the 10-mile stretch of navigable water between Oakland and San Francisco, whereas the expense of submarine cables would have amounted to as much as the remaining expense of the entire line—the change in the distance and the lengthening of the line being made further justifiable by the fact that all around the bay are towns, large and small, which form satisfactory customers for the power. The plant is now nearing completion.

Since their plans were laid out and the work begun, the Bay Counties Co. found that they could make a contract with the Folsom Co., who supply Sacramento, and whose plant was deficient in capacity. Accordingly they built to that city a line 60 miles in length, which they operate at 40,000 volts, supplying current in conjunction with the 10,000-volt plant 20 miles away at Folsom, the two plants, one at Colgate, 60 miles from Sacramento, operating in parallel with the Folsom plant, 20 miles from Sacramento. Later on the Bay Counties Co. built, and is now operating, a line 152 miles in length from their plant to the city of Oakland. To reach this city they had to cross the navigable straits of Carquinez, through which the deep-water grain ships go from San Francisco bay to the principal coast grain shipping port of Port Costa. Fortunately these straits are bordered with high hills. At these hills they erected towers and stretched their cables with a span exceeding 4000 feet, effecting one of the most remarkable feats that has ever been attempted in long-distance power transmission. Up at Colgate their generators run day and night, supplying power to these distant points, with the result that the company is successful, not only from an engineering point of view, but financially successful, with the success that has given confidence and strength to all electrical transmission securities along the Pacific coast. These plants operate lights, mines, railroads, flour mills, and in every operation have given such service to their customers that, in spite of the fact of recent discoveries of large quantities of fuel oil, their only difficulty is to find enough power to supply the demand made upon them.

I might go further and describe the power plant of the Big Creek Co., whose lines run along the seashore and operate almost continually in a sea of fog, or that of the Fresno Co., which was the first, with the exception of that at the Chollar mine at Virginia City, Nev., to operate at a head exceeding 1000 feet, or give a description of the plant at Bakersfield, where electric power is preferred to a ditch system for irrigation; but in describing these plants I would only be repeating what has been said concerning them, or



At times of light load portions of the stream shoot out into the river without striking the buckets of the impulse wheels. No attempt is made to "control" the flow of water by the governing apparatus, and sometimes the stream reaches clear across the canyon.



Flume Tender's Cabin on the Colgate Flume

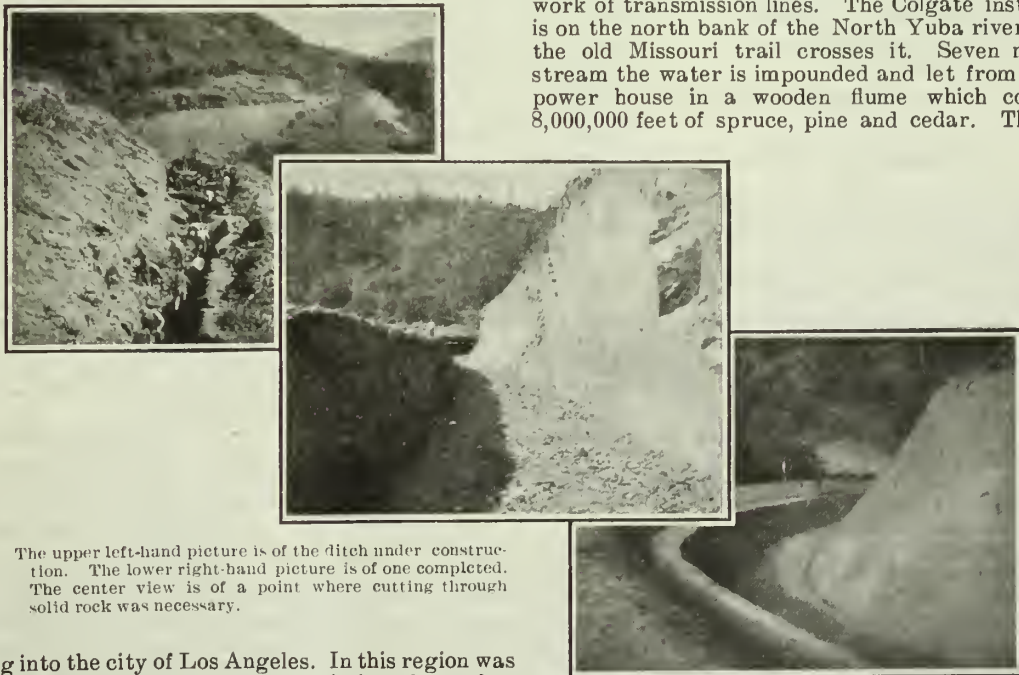
Spillway or Overflow Drain from the Colgate Flume

The center picture is a point on the Colgate flume known as Cape Horn, and illustrates some of the difficulties encountered and successfully engineered.

repeat descriptions which, on a larger scale, would apply to the two plants that have just been mentioned. Instead of going over these in detail, I prefer finally to call your attention to the collection of plants

built, with a transmission of 80 miles at 33,000 volts.

In addition to Prof. Perrine's remarks it may be said that the Colgate development has been most notable on account of the difficulties in its construction and the long range of its current-supplying network of transmission lines. The Colgate installation is on the north bank of the North Yuba river, where the old Missouri trail crosses it. Seven miles up stream the water is impounded and let from dam to power house in a wooden flume which consumed 8,000,000 feet of spruce, pine and cedar. The flume

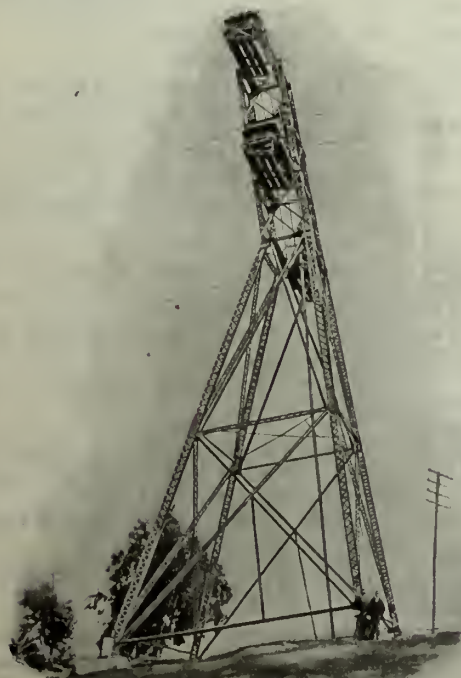


The upper left-hand picture is of the ditch under construction. The lower right-hand picture is of one completed. The center view is of a point where cutting through solid rock was necessary.

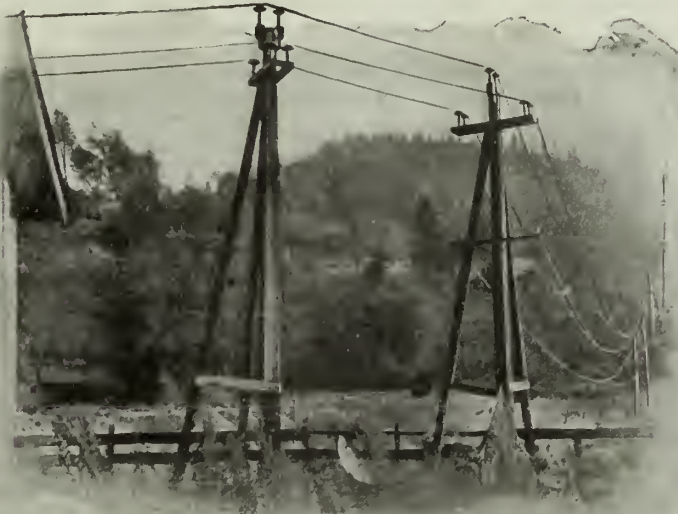
feeding into the city of Los Angeles. In this region was the first really long-distance transmission plant, that at Pomona, a single-phase lighting plant, where the power for lighting was transmitted a distance of 28 miles at 10,000 volts. From this beginning one plant after another has been installed, until finally the plant of the Southern California Electric Co. was

has the delivering capacity of 23,000 cubic feet per minute, pouring the water into the reservoir on top of the hill, at the foot of which the power house is located, 700 feet below. The water has considerable head on when it finally flows into the turbines, nearly four times as far below the water level as the Niagara turbines. The success of this and of similar plants like the San Joaquin one (which has a 1400-foot head), lies largely in the Californian practice of using a comparatively small stream of water with great head.

The flume which conveys the water to the power house has a watershed 532 miles in area to draw from, and is 7 feet wide and 6 feet deep for a large part of its length. From the flume itself the water drops from the power house through five separate steel and iron pipes 30 inches in diameter, and after passing through the gate valves impinges upon the turbine wheels, which are driven at high speed and direct connected to the generators. The Carquinez span, where the cables cross the Carquinez strait 200 feet above the water, is 4480 feet in length—three times the length of the Brooklyn bridge. The steel towers which carry the shore ends of the cable are noticeable viewed from the engineering standpoint and are also beautiful pieces of lattice work. The cables are four in number, made of stranded plow steel.



The Leaning Tower of the Carquinez Span.



An Angle in One of the High Tension Lines.

THE HOME CIRCLE.

A Guardian Angel.

I see my dear one as she takes
Her way, with steps soft as the fawn,
And feel as when the light awakes
When day comes o'er the hills of dawn
She is my light; and, when we meet,
My soul lifts up with glad accord
And all around is fair and sweet
And seems a garden of the Lord.
No other woman have I known
To come into my life as she,
And change its music to a tone
Of grand, aspiring melody.
She taught my heart its happiest song,
Her heart and mine in sweet commune,
And then would we the strain prolong
Till it with Heaven's was in tune.
She turned my eyes to look within
And led my life the purest way;
And, be it short or be it long,
With her as guide, I'll never stray.
Once, gazing reverently above,
I thought I heard an angel sing:
"Blessed are they that look on love
And find it is a holy thing."

—George Birdseye.

A Bird's Elegy.

He was the first to welcome the Spring;
Adventurous, he came
To wake the dreaming buds and sing
The crocus into flame.

He loved the morning and the dew;
He loved the sun and rain;
He fashioned lyrics as he flew
With love for their refrain.

Poet of vines and blossoms, he,
Beloved of them all;
The timid leaves upon the tree
Grew bold at his glad call.

He sang the rapture of the hills,
And from the starry height
He brought the melody that fills
The meadows with delight.

And now behold him dead, alas!
Where he made joy so long:
A bit of blue amid the grass—
A tiny broken song.

—Frank Dempster Sherman.

A Gruesome War Dance.

Our trouble all came from hiring the young Pawnee to carry in one of Arnold's deer.

We were camped on the thick willows on the Loup river between Timber creek and the Cedar, and had been out three days. There was already considerable snow on the ground, more had fallen during the night, so that the walking was very bad.

On the morning of that third day we sat at breakfast discussing means of bringing in the two deer which Arnold had killed the evening before. It was just then that this Indian came down the river and turned into our camp.

As soon as we had hired him to carry in one of the deer we all set out together. After a long search Arnold found one of his deer where he had cached it in a snowdrift. The Indian promised to get into camp with it before dark. We went on for the other deer, which we found and undertook to carry to camp, packing it turn about. The snow was so deep that long before we got in we were so tired that we could carry the deer but a few rods at a time. However, we did finally get to camp at dark, and there found three Indians waiting for us. The other deer had not arrived.

While preparing supper we both threw our belts, knives and pistols upon the bed. After we had fed our visitors they told us that they were camped across the Cedar, up the Loup a very short distance. So after supper we decided to go with them and see if the Indian had got that far with our deer. We went without arms.

There was no moon; but the stars and the snow-covered ground made it quite light. The three Indians went ahead, breaking the trail, and we followed. They traveled very fast for some time; then they broke into a trot, which grew gradually faster and faster until we found it almost impossible to keep up with them. Finally we lost sight of them and began to suspect something was wrong. However, we concluded to follow on. They could not

hide their trail in the deep snow, and we could always find our way back to camp.

After a while an Indian struck for the hills, making a large trail, seemingly to lead us after him. The other two went on up the river. We were sure their camp was not in the hills, so we followed the two up the river. Soon another trail, also large, turned into the hills; but we followed the remaining man up the river.

After a short distance the third trail turned into the hills. We stopped in the cold and the starlight to talk over the situation. Far away from over the hills came the shrill, whining wail of a lone coyote; then all was silent.

What should we do? Evidently the Indians had not intended to take us to their camp. We were only the more determined to find it. For we were now satisfied that the Indian had stolen our deer and had taken it to the Pawnee encampment.

We turned down to the river and went on the ice, where the walking was much better. The snow crunched under our stiff boots, cold wind sighed past our ears, and the eddying flakes blew into our faces. The bright air was deliciously fresh, but on the snow-clad star-lit prairie nothing appeared to break the stilly whiteness, to tell us which way we should turn our footsteps. However, we traveled up the river several miles, until we were well tired out, and were about to give up the search, when we heard a far-distant muffled sound. Turning a bend in the river, we saw two glowing tents lit up with great fires within.

The Indians were camped in the willows on the west side of the river. Between us was a large air rift in the river, kept upon by the swift current. We found a long log which we threw across the dangerous hole. Then, balancing carefully, we walked over. To have fallen meant a certain death under the ice. We found no trail, so we pushed the willows apart and crowded through. In the clearing we discovered several other tents, most of them seemingly deserted. The one nearest us was well lit up. Numerous moving shadows played on its side. Much talking and laughter came from it. We went to it, raised the flap and stepped in. The noise and talk stopped instantly.

The air was close and smelled of cooked meat. In the center a large fire roared. On it was a great boiling kettle of venison. We looked around. Each Indian had a rib of deer. A feast was on. We knew they were eating our deer.

After a time I asked, "Whose tepee is this?" A large, fat Indian struck himself on the breast and said, "It is mine."

Arnold recognized him as Doctor Big Bear, and shook hands with him. The other Indians then resumed their feast. He gave us seats near himself, and we asked about our deer. Big Bear admitted that it was our deer, explaining that it was all right about the deer—that he and Arnold were just like brothers. I told him he should bring the part not cooked—the hide—and a good blanket to our camp and it would be well. Otherwise we would go to the White Father (the Indian agent), who would send the chief and Big Bear to Omaha in irons.

The doctor smiled; then he said in Pawnee, "Whose deer is it? Did you kill it?"

I told him that Arnold killed the deer, but that we were hunting together as one man.

The doctor turned to Arnold, who could not understand Pawnee, and said in English, "He say he shoot deer."

Nervously Arnold answered, "Yes, yes, he kill him—he shoot him."

I said to Arnold, "That will not do. They know I don't know where the deer was. The boy told them you killed it."

Then in Pawnee to the Indian I said: "Speak out straight from your mouth. We are here; speak straight out."

He turned to Arnold and again said: "He say—he—"

I was angry. I hit him on the side of the jaw just hard enough to show him I meant business. The other Indians had

been talking and eating. At this a sudden hush ran around the lodge. It should have warned me.

Again I said to the doctor: "Speak straight out from your mouth. We are here. Speak out."

The old rascal kept quiet a moment, then, calling Arnold "Brother," said: "You come—last-year-my-camp—Florence. He say—he shoot—"

Hardly had his mouth closed when I hit him again. The blow twisted his head around sharply. Again the sudden hush ran around the lodge.

Then the doctor drew himself back, shoved his hand under his blanket and said: "Kit-te-ko Te-sho-dish."

I answered: "Yes, very mad."

He said: "Perhaps you are looking for a fight?"

"Yes, looking for a fight," I said, as I put my hand inside my breast, pretending to reach for a pistol.

So we stood glaring at each other. All was still; no one moved. At last three bucks rose. One passed out; the others sat down. Again there was silence—everyone anxiously expectant.

Ere long outside a squaw began a sing-song cry. Now her tones were low and mournful, low and mournful came the wail. Now it grew faster, faster and fiercer, even more terrible. Revenge, defiance were her theme. Onward, upward hurried the wailing.

Then the bucks moved uneasily. I asked them why she cried. I received no answer. All were silent. Then to a boy I shouted:

"Why does she cry?"

"Because you hit her man," answered he, jumping up.

At this all the Indians sprang to their feet. More Indians crowded into the tepee. They talked and gestured fiercely. The excitement was growing. Arnold and I stood back to back waiting.

Some of the Indians began to move in and out, still talking, still gesticulating. Soon a deer's hindquarters were brought in and flung at my feet, then the hide, then the forequarters, then more meat. And the smell of blood was added to the stench of close air, cooked meat and Indian sweat.

I said to Arnold, "Say all. Tell them to bring it all. Fight for time." Then I added, "There are some red-hot irons in the big fire. We must grab them, strike right and left, and break for liberty. We can get away before they realize what we have done."

"No, no," he exclaimed. "We can't do that. There are too many. Let me fix it."

The Indians had quieted down some, watching us, awaiting our next move. Arnold turned to the doctor, took the rascal's hand and said, "We are brothers, take the deer, it is wicked to fight."

The Indian smiled, and his beady eyes gleamed treacherously.

Outside the war-song had begun again. More meat, cooked and uncooked, was hurried in and thrown at my feet. The excitement was swiftly growing. The Indians move around us in a circle, all muttering, all swaying their arms and their legs. Soon the circle began to move. One Indian inside took up the war-song. Others joined in the wailing chant; the gruesome war-dance was on.

We folded our arms and looked about. As yet they were afraid to attack us.

Round and round went the dance, faster ever faster. Fiercer and fiercer grew the song. Sweat began to stream down our faces. The air was hazy with smoke and dust, and stench. It was hell.

Then I thought swiftly and remembered that I knew Spotted Horse, one of the chiefs of this camp. Eagerly I looked for the young chief. He was not to be seen. I despaired.

At last a young Indian came in. He seemed to have just arrived at camp. I looked fixedly at him, until he seemed to be conscious of myself alone. Then in Pawnee I said: "Go tell Spotted Horse to come here. His white brother wishes to speak to him. Go." The Indian immediately raised the flap of the tepee and disappeared.

Some of the dancers noticed this. The dancing quieted down. The leaders started after him.

Then again Arnold said good-bye to the doctor and we started to go. A crowd immediately stepped in front of us. They pointed to the meat and gestured fiercely.

We took our old positions, acting brave, though looking dejected. Soon the leaders returned, and again the circle was formed. Wilder and faster the dancing grew. Round and round went the circle. More Indians crowded in. A squaw stirred the fire. It roared and crackled, and long-pointed red flames leaped into the dark air, lighting up the cruel faces.

One Indian drew his knife, then another, and another. One left the surging circle and danced toward us, singing wildly, and slashing the air excitedly.

"This is terrible," muttered Arnold. "We've got to grab those irons," I said. "Are you ready?"

"Yes."

"It's our only chance."

"Let's risk it."

"Ready!" Our muscles were tense for action. But just then I saw Spotted Horse's head thrust into the tepee. "Wait!" I cried.

Spotted Horse gazed about a second until his eye fell on us. Then he hurried in, flinging dancers right and left, elbowing his way straight to us.

We each grasped one of his hands. He slyly smiled at our sighs of relief, and said, "You-heap-bad-scare?"

"Yes," I laughed nervously, "heap bad."

The Indians quieted down quickly and one by one sneaked out of the tent.

Spotted Horse led us to his tepee, and gave us seats with him on the raised part, which was covered with robes and blankets. I told him our trouble, and the cause of it. So he promised to bring us the deer and a good blanket the next day. We thanked him, shook hands, and started back to camp.

Throughout the Indian village all was dark and quiet, not an Indian in sight. We hurried on silently for a mile; then, feeling more secure, we began to talk over our narrow escape.

At our camp we found everything as we had left it. But we did not sleep much that night. Early the next morning we heard Spotted Horse call. We looked out and saw only an Indian pony some forty yards away. When we answered, the chief appeared from behind the pony. He unloaded all the meat, cooked and uncooked, the deer's hide, and a very poor blanket. Then he jumped on his horse, yelled good-bye, and started back.

We laughingly cried after him, "Spot, oh, Spot! We said a good blanket!"

He laughed, waved his hand, and galloped away. He knew we were glad enough to get off with even a poor blanket!

That day the Indians moved on up the river. We stayed several days longer and enjoyed our hunt without molestation.—Outing Magazine.

SHE—"But you must admit that society in our village is all the time becoming more cultured."

HE—"Yes, I hear that the minstrel show next week instead of end men they advertise 'superior terminal facilities.'"

THE COUNT—I weesh to marry your daughter, saire! I am worth one hundred thousand dollaire.

THE MILLIONAIRE—But I thought you were a bankrupt.

THE COUNT—I mean zat I am vorth zat moch to you.

A WHITE-HAIRED MAN walked into the ordinary's office the other day and asked for a pension certificate.

"What ground for a pension have you?" he was asked.

"Why, when the engagement begun," he said, "I lost my head."

YOUNG MAN—"I wonder what's the best way to find out what a woman thinks of you?"

HENPECK—"Marry her."

How to Avoid Catching Cold.

A famous English doctor once wrote in the *Lancet*: "A chilly man is a sick man." If that is true the percentage of invalids in the American republic is somewhat appalling. A New York doctor, when asked about his English confrere's statement, laughed, but gave his indorsement.

"Of course, that doesn't mean that every man who feels cold is seriously ill," he said; "but, as a matter of fact, only very exceptional exposure is sufficient excuse for a well man's suffering from cold in any climate to which he is accustomed. If ordinary exposure in this climate can make a person uncomfortably cold, there is something wrong with that person's physical condition or clothing."

"Taking cold isn't a matter of temperature. It is a question of physical condition. Fatigue causes more colds than all the drafts that blow. A draft isn't going to harm a man whose nerves and circulation are in perfect tone. A man goes home fagged and jaded at the end of the day. He goes to an evening function in dress clothes, takes liberties with his stomach or nerves. He is chilly, takes cold, and swears it was all a matter of temperature or draft. If his blood was pure, his nerves steady and his digestion good, the temperature wouldn't have affected him."

"Quite aside from the problem of what we call colds, the ordinary sensations of cold seldom have an external cause. Their cause is internal. The men and women who go shivering along our streets in winter weather ought not to be cold, unless they have some disease that explains their chilliness. They think they can remedy matters by piling on heavy clothing. It can't be done that way. Naturally, warm clothing will help to offset a low temperature, but it will not make a man warm if there is, as is usually the case, some internal reason why he is cold."

"I believe that fully three-fourths of our people wear too many heavy clothes in cold weather. They feel cold, and the only thing they think of doing is to put on another thickness of flannel. Warm clothing is all right, but heavy clothing isn't, and the close fitting flannels that are so universally worn are an abomination. They keep the skin from breathing, and the moment the skin gets out of breath the owner of the skin will be cold, even if he wears flannel and fur a foot thick."

"It seems queer to me that people will never learn or put in practice the simple rules that will insure them comfort in cold weather. Putting aside invalids, we'll take the man who considers himself perfectly well, but who gets blue and shivers on a cold day. His circulation is out of gear. He must find the cause and remove it, if possible. If not, he must offset it as much as he can, by simple and rational means."

"Imperfect digestion may have impoverished his blood. Then he must forswear gastronomic indulgence and eat plain food that will make pure blood. The first plunge into wintry air, out of a warm house, will always make the pores gasp, and drive the blood from the surface to the inner fortresses in the big veins and arteries and around the vital parts of the body; but, if the circulation is good, the reaction will follow almost immediately, and the blood will flow back to the surface with a rush, producing a fine tingling glow."

"In order to bring about this happy condition a man must take care of his body and encourage his circulation. Pure air, wholesome food, plenty of exercise, frequent bathing and ventilation of the skin, and avoidance of sweltering clothes will put the average man where he can defy any winter weather this climate can furnish. If his nose and fingers do get cold temporarily in extreme cases, they will warm up quickly, and general prolonged chilliness will be unknown to him."

"Our houses and offices are too hot. We all know that. So far as possible we should remedy it; but, unfortunately, it isn't always possible, especially in an apartment house or office building. When one can't keep the temperature down to some point be-

tween 60° and 70°—preferably nearer 60° than 70°—one must grin and bear it, and do what one can to counteract the injury. At least, let the air be pure. Foul air is worse than a draft. Indeed, if a man is in prime condition a draught ought not to harm him. One great physician of this generation used to turn cold draughts of air on small sections of a patient's body until he got the patient into a condition where he could endure the cold current on his whole body."

"Few persons understand how desperately the skin needs ventilation. A large majority of my patients, I verily believe, do not expose their whole bodies to the air once from September to June. Now, that is ridiculous. It would be suicidal for a person who wasn't used to it to take off all his clothes and loiter around in a room at ordinary temperature, but the thing may be done by degrees, and the body needs an air bath at least once a day if the skin is to do its duty by the blood and nerves. For the same reason the skin must have its daily water bath. I favor the cold plunge for few persons. I think the warm tub bath should be used sparingly, but a sponge bath, followed by vigorous friction, everybody should have once a day. Cold water is preferable, but that, like the air bath, may be a matter of education. Bathe one portion of the body in tepid water, keeping the rest of the body covered. As the shock lessens with habit, bare more of the body at one time. When you are hardened to exposure to air and tepid water, gradually lower the temperature of the water until you are taking a sponge bath in cold water. That word sponge bath is a misnomer. I hate sponges. They are germ and filth carriers. Use your hands, or better, a rough wash rag that will create friction and can be boiled between baths. Don't use one wash rag for a week as some people do. The thoughtless uncleanness of decent people is beyond my comprehension."

"Take the matter of underwear. That's right in line with the cold cure we are discussing. Nine persons out of ten wear soiled underwear next the skin. I admit that laundry bills would keep many, save plutocrats, from changing every day, which is the ideal course, but at least underwear may be well ventilated between wearings. I advise keeping two suits going at once. Wear a suit one day. Put it where it will be well ventilated in fresh air the next day and don a second suit. Alternate the two suits until both are soiled. Then have a new deal. The rule will be worth money to you—but be sure to hang the suit you are not wearing out in the fresh air. Don't tuck it away in a dark closet."

"While we are talking about underwear, wool is unquestionably more conducive to warmth than anything one can wear, but there is absolutely no sense in wearing flannels as thick as a board. If all wool irritates the skin too much light-weight silk and wool mixture is quite as good. In case a person simply will not wear any wool, silk is the next best thing; but most of the physicians will, I think, agree with me that silk and wool is an excellent underwear mixture. Cotton and linen are good conductors of heat. They take the animal heat which the body produces by great effort and carry it away from the body as fast as it is pumped up. Wool, being a poor conductor, allows the body to preserve its warmth for its own purposes."

"Recently in several northern cities a most sensible plan has been adopted for the policemen. In winter a policeman, instead of putting on woolen underwear a foot thick, wears two full suits of very light weight woolen underwear. The idea is based on scientific fact, and has worked most successfully. The two light, loose suits allow the air to circulate freely and make thorough skin ventilation a possibility with greatly increased cold resistance as a result. I myself have adopted the idea and find it admirable. I can't say enough against the clinging, tight-fitting, ribbed underwear that seems so dear to womankind and is sinfully put upon many children. It is opposed to all rules of health and comfort."—N. Y. Sun.



ELGIN

When the Public has faith in a name it is a faith that must be backed up by good works.

Elgin Watches

Every genuine Elgin has the word "Elgin" engraved on the works.

have the name and works; and the faith of nearly 10,000,000 users as the world's standard timekeeper.

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Why Babies Cry.

It will probably astonish the young mother who has not yet outlived the happy novelty of possessing a baby "of her very own" to learn that a certain amount of crying is a physical necessity for all young babies. The child who does not cry upon its entrance into this troublous world, and who can not be made to cry, soon comes to the end of its span of existence, for its inability to cry denotes an equal inability to breathe. With its first pitiful cry the newly-born baby expands its little lungs and inhales the oxygen necessary for a proper start in life, and with every cry that follows it acquires an increase in vigor. Hence, to hush a baby's cry is not at all times a wise or sensible thing to do; indeed, provided the child does not cry from pain or hunger—a point which the vigilant mother can very easily determine—it will do it good, rather than harm, to let it cry as long as it will, even though the noise be somewhat of a tax upon the nerves and patience of the rest of the household. Of course, the cry of illness—which is generally a fretful wail—and that of pain and hunger—which is always sharp, intermittent and insistent—should receive immediate attention, for both are very exhausting to the little one.—The Designer.

DOMESTIC ECONOMY.

Hints to Housekeepers.

A slight flavor of onion is almost a must-have in hot dishes prepared from cold meat.

A tablespoonful of kerosene added to four or five quarts of starch will make the colored starched clothes iron easier.

Rubbing the inside of the salad bowl or fork with a cut clove of garlic or onion will give all the flavor desirable where the least flavor possible is desired.

At a recent luncheon the whole tomatoes served were peeled and cut in eighths nearly through, which made them look like red roses as they were brought in resting on lettuce hearts.

If you can not allow soup stock time enough to cool and the fat to harden, remove fat with absorbent cotton. Roll it in a tiny pad, dip it deftly across the top of the soup and the fat will be absorbed. If there is much fat, several bits of cotton may be necessary to clear it.

A cream cheese to be served with fruit is made light by beating up the cheese with a little olive oil. When it is soft and light it is then pressed into shape again before it is cut into pieces for serving. It should be sliced about 1 inch thick and served on a plate with a spoonful of whipped cream on it and a spoonful of gooseberry or currant jam at the side.

"When the days grow warmer," advises a man, "the air of the house will be greatly improved if a ventilator is substituted for the usual skylight. The latter can be removed entirely and its

place filled with an arrangement constructed on the Venetian-blind principle, which is to be had of carpenters or builders. This not only gratefully lessens the glare in the upper story, but creates a draught that keeps the air of the house constantly changing."

Domestic Hints.

POTATO CAKES.—Take cold mashed potatoes, moisten with a little cream, and work in sufficient flour, in which baking powder is mixed, to make a firm dough, adding a pinch of salt. Roll out the potato paste, thinly sprinkle with dry flour or a beaten egg, cut into rounds, and bake on a hot griddle for ten minutes; butter while hot, and serve.

BEEF HASH.—Chop rather fine cold roast beef and twice the amount of cold boiled potato. Put a piece of butter into a frying pan, and when melted put in the meat and potatoes. Add enough beef gravy or stock to moisten; stir occasionally; let it brown on the bottom of the pan, and then turn out like an omelet on a hot platter.

CURRY OF CHICKEN AND RICE.—Make a white sauce as follows: Melt one tablespoonful of butter without browning; add one tablespoonful of flour and stir until smooth; add one cup of milk and stir continually until it thickens; add one teaspoonful of curry powder, one-half of a cup of boiled rice, one-half of a cup of cold chopped chicken. When heated serve.

TOMATO SALAD.—Pare the tomatoes with a sharp knife; slice and lay in a bowl. Make dressing as follows: To one-half teaspoon salt, one teaspoon mustard and one-half teaspoon white pepper, add two heaping teaspoons olive oil, one drop at a time, until thoroughly mixed. Whip in the yolk of one egg and three tablespoons vinegar or lemon juice. Mayonnaise dressing may be substituted for this if preferred.

EGGS POACHED IN CREAM.—Half a pint of cream, six eggs, salt and white pepper, and a small teaspoonful of finely minced parsley. Bring the cream to a boil in a chafing-dish, break the eggs carefully, to keep the yolks whole, into the cream and cook until the whites are set—about three minutes. Have a delicate slice of toast for each egg on hot plates, lay an egg on each, pour the cream over them, sprinkle with pepper and salt and the chopped parsley and serve.

HAM CROQUETTES.—Mix one cup of hot mashed potatoes, one tablespoonful of butter, the yolks of two eggs and a dash or two of cayenne; beat thoroughly, then spread on a platter; put one cup of finely chopped cooked ham in a small frying pan with the yolk of the egg, stir over the fire for one minute; spread this on a platter, when cold take a spoonful of the potato and form it in a hollow, put into the hollow one teaspoonful of the ham and fold the potato over it, form it in the shape of a croquette, dip in beaten egg, then in bread crumbs, then in beaten egg and then in bread crumbs again; fry in deep, hot fat in the frying basket, drain and arrange on a hot platter.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, July 1, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	73 3/4 @ 71 3/4	73 1/4 @ 72 3/4
Thursday.....	71 3/4 @ 72 3/4	72 1/4 @ 73 1/4
Friday.....	72 3/4 @ 73 1/4	72 3/4 @ 73 1/4
Saturday.....	72 3/4 @ 73 1/4	73 1/4 @ 73 3/4
Monday.....	73 1/4 @ 74	74 @ 74 3/4
Tuesday.....	73 1/4 @ 75 1/4	74 1/4 @ 76

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	30 3/4 @ 29 3/4	30 3/4 @ 30
Thursday.....	29 3/4 @ 30 1/4	29 3/4 @ —
Friday.....	30 3/4 @ 29 3/4	30 3/4 @ —
Saturday.....	30 3/4 @ 30 1/4	— @ —
Monday.....	31 1/4 @ 32	*33 3/4 @ 35 1/4
Tuesday.....	— @ —	— @ —

*New.

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 14 1/4 @ —	— @ —
Friday.....	1 14 1/4 @ 1 14 1/4	— @ —
Saturday.....	1 14 1/4 @ 1 14 1/4	1 17 1/2 @ —
Monday.....	1 15 @ 1 15 1/4	1 18 1/2 @ 1 18
Tuesday.....	1 16 @ 1 16 1/4	1 19 @ 1 19 1/4
Wednesday.....	— @ —	— @ —

WHEAT.

The market has been decidedly firm the current week, but there has been no great amount of activity here, due more to limited offerings and to absence of pronounced pressure to realize rather than to lack of demand. There are only eleven ships on the engaged list for grain-loading in San Francisco port at this time, exporters being slow lately about chartering, being short on wheat. There are a dozen or more idle ships, however, in harbor awaiting engagement, and a good-sized fleet headed this way. The prospects are favorable for an ample supply of ocean tonnage for the season's needs. The ships here and on the way represent a carrying capacity of fully 450,000 tons of wheat. There is a better supply of ships, both spot and to arrive, than a year ago, the aggregate being 75,000 tons greater, based on carrying capacity for wheat. With crops promising poorly in a large portion of the wheat belt of the United States east of the mountains, and recently damaging weather to crops in France, as also in other parts of Europe, a good export demand is likely to be experienced during the season now opening, for the wheat of this State and coast. Speculative operators and regular dealers are doing considerable purchasing in the interior, in many instances paying relatively higher figures than are quotable here. It is the old game of keeping values down as much as possible in this center, with the view of making the farmer who is selling in the interior believe that he is getting the best of the bargain.

California Milling.....	1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside.....	1 12 1/4 @ 1 13 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Of qualities wheat.....	1 17 1/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	5s10d @ 5s10 1/2d	— s-d @ — s-d
Freight rates.....	36 1/2 @ 38 1/2	25 @ 26 1/2
Local market.....	95 @ 97 1/4	1 13 1/4 @ 1 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.14 1/4 @ 1.16 1/4.
May, 1903, delivery, \$1.17 1/2 @ 1.19 1/4.
Tuesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.16 @ 1.16 1/4; May, 1903, \$1.19 @ 1.19 1/4.

FLOUR.

There is a moderate export movement, principally to China and South America, but trade on local account is of light proportions. The aggregate of trade, however, is of fair average proportions for the end of the cereal year, which is invariably a quiet period in the flour trade. Supplies are of fair volume, but are not apt to be materially increased in the near future. While the general tone is slightly firmer than lately current, in quotable values there are no changes to note.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65

Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

The market for this cereal has not shown much activity since date of last review, neither has it been noteworthy for firmness. On local account old barley is naturally being given the preference for immediate use, the new not being sufficiently seasoned to be desirable at present for feed purposes and of course will not be serviceable for brewing for several months to come. Most of the inquiry at this date for new barley is on foreign or speculative account. Bids are not at a high range, and there are no evidences of any great quantity being secured here. Some purchasing is reported in the interior at prices above the parity of values current in this center.

New Barley.....	85 @ 95
Feed, No. 1 to choice old.....	92 1/4 @ —
Feed, fair to good.....	90 @ 92 1/4
Brewing, No. 1 to choice.....	1 00 @ 1 02 1/4
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

OATS.

No improvement has been developed in the general tone of this market or in quotable values since date of last report. Offerings are principally new Reds and Blacks, and these are moving slowly at the comparatively low figures now prevailing. White oats are nearly out of stock, as it is too early for new of this species. Values for White oats are consequently largely nominal at present. Wholesale custom could not be secured for offerings to arrive at full figures quoted.

White Oats, fancy feed.....	1 30 @ —
White, good to choice.....	1 25 @ 1 27 1/4
White, poor to fair.....	1 10 @ 1 15
Gray, common to choice.....	1 10 @ 1 25
Milling.....	1 30 @ 1 32 1/4
Surprise, good to choice.....	1 30 @ 1 35
Black Russian.....	1 00 @ 1 10
Red.....	1 02 1/4 @ 1 17 1/4

CORN.

Market is slow and is likely to so continue until values touch more reasonable levels than have been lately current. Stocks are not of very large proportions, but are showing some increase, and are considerably ahead of immediate requirements for either home use or shipment at the prices now ruling.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/4 @ 1 52 1/4

RYE.

Very little doing at present. Transfers are difficult to effect at figures satisfactory to the producer.

Good to choice.....	80 @ 85
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BUCKWHEAT.

In the absence of both offerings and demand, quotations for the time are wholly nominal.

Good to choice.....	1 55 @ 1 70
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BEANS.

Business is not brisk in beans of any variety and seldom is at this time of year. Values show steadiness, there being no undue selling pressure. Spot supplies are mainly Lady Washingtons and Small Whites. In colored beans Pinks and Bayos take the lead in point of quantities offered, but stocks of latter variety are by no means heavy. Black-eyes are in too light supply to admit of other than a small jobbing trade. Limas are being offered sparingly, and it is the exception where they can be obtained at less than full current figures.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 40 @ 2 55
Lady Washington.....	2 35 @ 2 50
Pinks.....	2 05 @ 2 20
Bayos, good to choice.....	2 90 @ 3 10
Reds.....	2 25 @ 2 75
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 90 @ 5 10
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

There are plenty of green Dried Peas on market, but there is scarcely any wholesale inquiry for them, dealers being well stocked. Niles Peas are too scarce to quote, market being practically bare of home product, both here and in the interior.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

Market is firm, with demand good at prevailing values for wools of all descriptions, but more particularly for bright and free stock, with little of this sort now offering, either here or in the country. Eastern and local buyers have been lately watching the market very closely, considerable competitive bidding being drawn forth where good to choice wools were for sale.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	15 @ 17 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 16
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

HOPS.

Aside from the hops in the hands of jobbers, there are virtually none now offering in this center. Dealers quote 16@18c for good to choice of last crop and 15@16c for choice new to arrive. There are various and conflicting reports about the amount of new hops which have been contracted for, but it is doubtful if any very heavy percentage of this year's yield has passed out of the hands of growers. A New York review of the Eastern market is herewith given: "The market throughout has a firm tone. State hops are in very few hands and stocks are so small that holders ask extreme prices for them. Some special growths cannot be bought at the higher figures quoted. Brewers have taken a moderate quantity of Pacific Coast hops for current needs, paying 20@21c generally. Dealers have made some purchases on the market, and a quantity of very nice quality sold at 19c. There are no more of that grade to be had at the price, however. Yearlings practically gone. Some trading in old olds, and a hardening tendency to values. Crop reports from this State are not favorable, cold weather making the yards very backward. It looks as if the crop will be a smaller one than last year. From England there are complaints of bad weather and backward yards, but reports from Germany are generally fair."

HAY AND STRAW.

The market for hay is very quiet, and always is around the Fourth of July. Buyers are using the stereotyped excuse for not purchasing that they do not care to run the extra risk of fire on account of pyrotechnics let loose in celebrating the nation's birthday. Prices have remained quothly about the same as on preceding week, but sales at extreme current figures were the exception rather than the rule, and were confined mainly to select qualities of old hay. A more active demand for new hay is looked for in the very near future.

NEW.

Wheat, good to choice.....	8 00 @ 9 50
Barley and Oat.....	6 50 @ 8 50
Volunteer Oat.....	5 50 @ 7 50
Alfalfa.....	— @ —

OLD.

Wheat, good to choice.....	9 00 @ 12 50
Wheat and Oat.....	9 00 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 50
Straw, 3/4 bale.....	40 @ 50

MILLSTUFFS.

Values for Bran continue at a tolerably high range, with spot stocks largely Northern product and in few hands. Middlings are being offered very sparingly and temporarily are commanding stiff figures. Rolled Barley and Milled Corn are ruling fairly steady, but supplies of both descriptions are sufficient for current demands.

Bran, 3/4 ton.....	18 00 @ 19 50
Middlings.....	21 00 @ 23 00
Shorts, Oregon.....	18 50 @ 20 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

There is not much doing at present in any of the seeds quoted below. Most kinds are in too light supply to admit of any extensive operations. Canary Seed of choice quality is in especially limited stock, the latest arrival from the East being mostly in damaged condition. Quotations throughout are the same as last noted, but, owing to the prevailing inactivity, values are largely nominal at this date.

Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 50 @ 3 75
Mustard, Trieste.....	3 30 @ 3 60
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 1 1/4
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Grain Bags are meeting with fair request and values are being tolerably well maintained at the quoted range. In fact, in the filling of small orders some holders are asking a slight advance on quotations. Fruit Sacks are without quotable change in price and have not yet begun to move in great quantities, although active inquiry is looked for these sacks at an early day.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/4
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Market continues firm for Hides, with demand fairly active at prevailing values. Pelts are receiving more attention than for some time past and better average figures are realized, although the quotable range of prices remains practically as before. Tallow is not lacking for custom at full figures, purchases being mostly on account of shipping orders.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/4 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/2	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	15 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ 2 00	— @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 00 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	120 @ —
Pelts, medium, 3/4 skin.....	50 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	40 @ —
Pelts, shearling, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ —	37 1/4 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

While offerings are light of both Comb and Extracted, buyers are not numerous at extreme current rates, nor do they show disposition to operate in a wholesale way at prices now generally asked. Most dealers are doing little else at present than awaiting developments and producers, as a rule, are not crowding honey to sale.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

BEESWAX.

Stocks are of light proportions and are likely to so continue for some time to come. There is no trouble in securing buyers at full current rates.

Good to choice, light, 3/4 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Business doing in this line is not heavy, as is to be expected at this time. The Beef market presents an easy tone, but as regards actual values the changes have not been sufficient to warrant any material alterations in quotations. Mutton is not offering in great quantity, and although current values are being fairly well sustained, the market is not firm. Veal is in very moderate receipt and is bringing tolerably firm figures. Lamb is not in excessive supply and prices are ruling steady at last quoted range. Hogs are arriving in just about sufficient quantity for present needs, and sales are mainly at full current figures.

Beef, first quality, dressed, net 3/4 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 200 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 1/4 @ 6 1/2
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 1/4
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	7 @ 8 1/4
Lamb, spring, 3/4 lb.....	9 @ 9 1/4

POULTRY.

Much the same unsatisfactory condition prevailed in the poultry market as during preceding week. The demand was far from active, and inquiry for domestic product was confined mainly to choice young stock. Fryers, Broilers and Young Roosters sold to fair advantage, considering the general condition of the market. Common old fowls received little attention, even at low figures. Small Hens were especially difficult to place, marketmen giving Eastern Hens the preference.

at higher figures, owing to the marked difference in size.

Turkeys, dressed, choice.....	@	—
Turkeys, alive, Hens, 1/2 lb.....	13	@ 14
Turkeys, alive, Gobblers, 1/2 lb.....	13	@ 14
Hens, California, 1/2 dozen.....	4 50	@ 5 00
Roosters, old.....	4 50	@ 4 75
Roosters, young (full-grown).....	5 50	@ 6 50
Fryers.....	3 50	@ 4 50
Broilers, large.....	2 75	@ 3 50
Broilers, small to medium.....	2 00	@ 2 50
Ducks, old, 1/2 dozen.....	3 50	@ 4 00
Ducks, young, 1/2 dozen.....	4 00	@ 5 50
Geese, 1/2 pair.....	1 25	@ —
Goslings, 1/2 pair.....	1 25	@ 1 50
Pigeons, old, 1/2 dozen.....	1 50	@ 1 75
Pigeons, young.....	1 50	@ —
Hare, Belgian, large, 1/2 doz.....	4 50	@ 5 00

BUTTER.

Trade continues slow and market lacks firmness, particularly for creamery and dairy product which is ordinarily of high grade, but which is now showing defects on account of heat, poor feed, cows becoming nearly dry, etc. For a little butter of superior quality higher prices than are quotable are being realized from special custom, but on the bulk of offerings concessions to buyers are of common occurrence.

Creamery, extras, 1/2 lb.....	21	@ —
Creamery, firsts.....	20	@ —
Dairy, select.....	20	@ —
Dairy, firsts.....	19	@ —
Mixed store.....	16	@ 18

CHEESE.

There are only moderate arrivals of domestic, and spot offerings are little more than enough for immediate requirements. The market is firm at the figures now current, especially for choice, full cream cheese which is sufficiently seasoned to be desirable for carrying. Markets East are firm, but some Eastern cheese has been lately offered here at relatively lower figures than current at producing points, the object supposed to be the introduction of certain brands having no established reputation in this market.

California, fancy flat, new.....	10	@ 10 1/2
California, good to choice.....	9 1/2	@ 10
California, fair to good.....	—	@ —
California, "Young Americas".....	9	@ 11

EGGS.

This market has been a dragging one since last review. While receipts showed some decrease, the arrivals were of liberal volume for this time of year and were in excess of the demand. Most of the eggs now coming forward are showing poor keeping qualities, natural to the heated term. These eggs are not suitable for cold storage, but many of them have to be placed in ice house, it being impossible to find an immediate market for all offerings. Some strictly fancy stock going to special custom brought above quotations.

California, select, large, white and fresh.....	18	@ 19
California, select, irregular color & size.....	17	@ 18
California, good to choice store.....	15	@ 16

VEGETABLES.

Most kinds of vegetables in season were in liberal receipt and the general trend of the market was in favor of the consumer, although changes in quotable rates were not very numerous or pronounced. The weakness in a good many instances was due to the poor average quality of offerings. Especially was this the case in regard to Peas, Corn and String Beans. Choice of either kind were not in excessive supply, but there was a superabundance of common qualities. Cucumbers sold at reduced figures, under liberal receipts, both in large and small boxes. Tomatoes were quite plentiful and market was weak at quotations, although demand was fair.

Asparagus, 1/2 box.....	75	@ 2 00
Beans, Refugee, 1/2 lb.....	3	@ 4
Beans, String, 1/2 lb.....	2	@ 3 1/2
Beans, Wax, 1/2 lb.....	2	@ 3
Cabbage, choice garden, 1/2 100 lbs.....	50	@ —
Corn, Green, Alameda, 1/2 crate.....	2 50	@ —
Corn, Green, sack.....	75	@ 1 75
Cucumbers, large box.....	1 00	@ 1 25
Egg Plant, 1/2 lb.....	8	@ 10
Garlic, 1/2 lb.....	2	@ 3
Onions, Yellow Danver, 1/2 cental.....	1 00	@ 1 25
Onions, New Red, 1/2 cental.....	60	@ 75
Peas, Sweet garden, 1/2 lb.....	2 1/2	@ 3
Peas, good to choice, 1/2 sack.....	1 00	@ 1 50
Peppers, Green Chile, 1/2 lb.....	7	@ 10
Rhubarb, 1/2 box.....	—	@ —
Summer Squash, Bay, large box.....	1 00	@ 1 25
Summer Squash, small box.....	35	@ 50
Tomatoes, small box.....	65	@ 85

POTATOES.

There has been considerable fluctuation in the receipts, and the tone of the market has been firm or weak as arrivals proved light or heavy. The quotable range of values, however, did not change materially. The weakness manifested was confined principally to qualities under choice, the proportion of offerings of this sort being decidedly large.

Burbanks, good to select, 1/2 cental.....	1 00	@ 1 50
Early Rose.....	50	@ 1 00
Garnet Chilo.....	85	@ 1 00
Old Burbanks in sacks, 1/2 cental.....	60	@ 1 00
Petaluma and Tomales Burbanks.....	—	@ —
Sweets, Merced, 1/2 cental.....	—	@ —

The Fruit Market.

FRESH FRUITS.

Arrivals and offerings of most kinds of Summer fruits were heavy, and there was a generally weak market, especially for the lower grades, with a large proportion of present supplies of this character. Canners and wholesale operators named low figures as a rule, and in the absence of any other outlet for much of the fruit on market, canners obtained considerable quantities on their own terms. Canners secured small and scrubby Apricots down to \$5 per ton, and it had to be a superior quality of this fruit for which more than \$17.50 per ton was obtainable in a wholesale way. Packers' bids on Cherries were 1@1 1/2c. per pound for common white, 1 1/2@2c. for fair to good black, and 4@5c. for Royal Anne. Some of the latter, extra large and desirable for confectioners' use, brought 7c. per pound. Canners named \$2 per chest for Blackberries and Loganberries, \$3 for Raspberries, and \$2@3 50 for large Strawberries. Peaches of fine quality were not plentiful, and in a limited way brought comparatively good figures. Peaches in baskets sold in a small way up to \$1. Plums of early varieties were in liberal supply and cheap. Early Pears were quite plentiful and went at generally low figures. Apples sold at a wide range, owing to great difference in quality, and few choice enough to command \$1@1.25 per 50 pound box. Seedless Grapes were in fair supply and averaged lower than last quoted. Cantaloupes, Nutmeg and Watermelons made a fair showing. Some of the Cantaloupes were over-ripe, and in consequence were not readily placed.

Apples, fancy, 4-tier box.....	@ —
Apples, good to choice, 1/2 50-lb. box.....	1 00 @ 1 25
Apples, common to fair, 1/2 50-lb. box.....	40 @ 75
Apricots, Royal, 1/2 crate.....	25 @ 50
Apricots, basket.....	15 @ 30
Cantaloupes, Indio, 1/2 crate.....	75 @ 1 50
Cherries, Black, 1/2 box.....	25 @ 50
Cherries, White, 1/2 box.....	20 @ 40
Cherries, Black, in bulk, 1/2 lb.....	1 1/2 @ 4
Cherries, White, in bulk, 1/2 lb.....	1 @ 3
Cherries, Royal Anne, 1/2 box.....	40 @ 75
Cherries, Royal Anne, 1/2 lb.....	4 @ 6
Blackberries, 1/2 chest.....	2 00 @ 3 50
Raspberries, 1/2 chest.....	3 00 @ 7 00
Currants, 1/2 chest.....	2 50 @ 4 00
Gooseberries, Oregon Imp'd, 1/2 chest.....	@ —
Gooseberries, English, 1/2 lb.....	@ —
Grapes, Thompson Seedless, 1/2 crate.....	1 25 @ 2 00
Logan Berries, 1/2 chest.....	2 00 @ 3 00
Nutmeg Melons, 1/2 crate.....	75 @ 1 50
Peaches, 1/2 box.....	40 @ 1 00
Peaches, basket.....	40 @ 75
Pears, 20 lb. box.....	25 @ 75
Plums, Cherry, 1/2 box.....	20 @ 50
Plums, Clyman, 1/2 box.....	25 @ 50
Plums, Simoni, 1/2 box.....	90 @ 1 00
Prunes, Tragedy, 1/2 box.....	75 @ 1 00
Strawberries, Longworth, 1/2 chest.....	4 00 @ 8 00
Strawberries, Melinda, 1/2 chest.....	2 50 @ 5 00
Watermelons, Indio, apiece.....	20 @ 25

DRIED FRUITS.

New Apricots are beginning to come forward and are at present receiving the bulk of attention in the market for dried and evaporated fruits. Some purchases are reported for early deliveries of Northern at 6c in the sweat boxes, but for later deliveries 5 1/2@5 3/4c in the sweat boxes is named for prime to choice Northern. For Southern Apricots the market is not quoted over 5 1/2@5 3/4c on prime fruit in the sweat box. Dealers and speculative operators who have sold short are now endeavoring to cover at a profit. Most of the stock sold for future delivery has yet to be secured. On new Prunes handlers are bidding on 2@2 1/2c basis for the four sizes, latter for Santa Claras and lower figure for outside districts, these figures being for the fruit in bulk at producing points. Prices named on future Peaches range from 4 1/2@5 1/2c for standard to choice and 6 1/2@7 1/2c for fancy. Pears are wanted for October delivery at 6@6 1/2c for standard and 7@7 1/2c for choice in sacks. The figures named on Peaches and Pears are for sacked stock in carload lots delivered at primary points. Stocks of last year's tree fruit are confined almost wholly to Peaches and Prunes. The supplies of these are now light and bid fair to be soon wiped out, there being a very fair movement at quotably unchanged rates.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	@ —
Apricots, Royal, good to choice, 1/2 lb.....	6 @ 6 1/2
Apricots, Royal, fancy.....	7 @ 7 1/2
Nectarines, 1/2 lb.....	@ —
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/2
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2@3 1/4c; 50-60s, 4@4 1/2c; 60-70s, 3 1/2 @ 4c; 70-80s, 3 @ 3 1/2c; 80-90s, 2 1/2 @ 3c; 90-100s, 2c @ 2 1/2c; these figures for 1901 crop.	

COMMON SUN-DRIED.

Apples, sliced.....	@ —
Apples, quartered.....	@ —
Peaches, unpeeled.....	6 @ 6 1/2
Pears, prime halves.....	@ —
Plums, unpitted, 1/2 lb.....	1 1/2 @ 2 1/2

RAISINS.

Considering the lateness of the season

and the limited quantity of Raisins offering, the business doing is of decidedly fair volume. Stocks are principally loose Muscatels and are in few hands.

Following are the prices for 1901 crop in carload lots:	
Loose Muscatels—	Per lb.
4-crown.....	5 1/2 @ 6
3-crown.....	5 1/2 @ 6
2-crown.....	5 1/4 @ 5 1/2
Seedless Sultanas.....	@ —
Thompson's Seedless, bleached.....	9 @ 9 1/2
Seeded—	
1-lb. carton.....	7 1/2 @ 8
12-oz. carton.....	6 1/4 @ 6 1/2
London Layers, 20-lb. boxes—	
2-crown.....	@ —
3-crown.....	@ —

CITRUS FRUITS.

Orange market is very quiet, with offerings and demand both light. Sales at full current rates are the exception, there being few sufficiently choice to command top figures. Lemons are in moderate request, but the supply is proving ample, and for other than most select the market lacks firmness. Limes are selling at unchanged figures.

Oranges—Navels, 1/2 box.....	@ —
Mediterranean Sweet.....	1 00 @ 2 50
Valencias, 1/2 box.....	1 50 @ 4 00
Seedlings, 1/2 box.....	1 00 @ 1 50
Tangerine, quarter box.....	@ —
Lemons—California, select, 1/2 box.....	3 25 @ 3 50
California, good to choice.....	2 00 @ 3 00
California, common to fair.....	1 25 @ 2 00
Grape Fruit, 1/2 box.....	@ —
Limes—Mexican, 1/2 box.....	5 00 @ 5 50

NUTS.

Spot stocks of Walnuts and Almonds are insignificant and trade is of necessity light. In futures there is nothing to report. Dealers and growers are both awaiting developments.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, 1/2 lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @ 12 1/2
Cal. White Walnuts, No. 2 soft shell.....	10 @ 11
Cal. White Walnuts, No. 1 hard shell.....	10 @ 11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	5 1/2 @ 6

WINE.

There is very little doing in the wholesale wine market in the way of transfers from first hands. Dry wines of last year's vintage are quotable nominally at 20@25c per gallon, extreme figures being more in accord with the views of holders than with the bids of large buyers. It is reported that the Wine Dealers' Association expect to pay about the same as last year for sweet wine grapes, or an average of about \$16 per ton, the crop of sweet wine grapes not promising to be especially heavy. The outlook for dry wine grapes, however, is for a more liberal yield than last season, and the large buyers are now talking fully \$2 per ton under last year's figures, or not to exceed \$22 per ton average for choice Northern grapes.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	97,946	6,605,872
Wheat, centals.....	16,391	10,362,654
Barley, centals.....	43,235	6,360,914
Oats, centals.....	20,942	823,412
Corn, centals.....	1,193	151,539
Rye, centals.....	2,275	274,776
Beans, sacks.....	5,704	712,179
Potatoes, sacks.....	13,793	1,406,842
Onions, sacks.....	3,033	215,972
Hay, tons.....	2,072	146,750
Wool, bales.....	2,120	77,678
Hops, bales.....	40	9,301

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1901.	Same time last year.
Flour, 1/2 sacks.....	50,904	4,406,002
Wheat, centals.....	502	9,575,009
Barley, centals.....	7,643	4,330,476
Oats, centals.....	202	5,535
Corn, centals.....	578	14,708
Beans, sacks.....	1,337	27,780
Hay, bales.....	1,332	35,163
Wool, pounds.....	—	1,809,485
Hops, pounds.....	1,228	558,570
Honey, cases.....	61	6,229
Potatoes, pack's.....	2,384	54,444

California Dried Fruit at New York.

NEW YORK, July 1.—Evaporated apples, common, 7@9c; prime wire tray, 9 1/2@10c; choice, 10 1/2@10 3/4c; fancy, 11@—c.
California Dried Fruits.—Fair business in prunes, mostly for export, at quotable unchanged values. Other fruits quiet but steady.
Prunes, 3 1/2@6 1/4c.
Apricots, boxed, 10 1/4@14c; bags, 10@12c.
Peaches, unpeeled, 8 1/2@10 1/2c; peeled, 12@16c.

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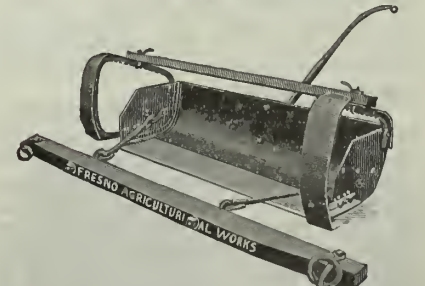
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Tulare Grange.

TO THE EDITOR:—Tulare Grange held its regular session at its hall on Saturday, the 21st ult. The secretary read letters from Congressman Needham and U. S. Senators Bard and Perkins acknowledging receipt of Grange resolutions on the renting of grazing lands of the United States and pledging careful consideration of them.

The following resolution was offered, discussed and passed:

"Resolved, This Grange approves the action of our United States Senators in their opposition to the bill reducing the duties on Cuban products marketed in the United States."

The formation of a co-operative or Rochdale store was brought up and referred to a special committee of three.

The third and fourth degrees were impressively conferred on a class of two.

The National Grange subject for June was taken up: "Do Farmers Need a Special Education?" All agreed farmers do need special education, that the best education is the practical education and work of the farm, but that the theoretical, literary education, which can now be gained, endows a practical farmer with great and manifest advantages over the farmer lacking them.

The next subject for consideration will be, "Why does cultivation of the soil promote plant growth, and to what extent can cultivation contribute to such growth?" The discussion of this subject will tend to practically illustrate the necessity of special education to the farmer.

The secretary read five questions drawn from the question box:

1. How shall the irrigation district bonds be paid?
2. Has blight destroyed the pear orchards of Tulare county?
3. What has been the good results of the free distribution by the Board of Supervisors of squirrel poison?
4. What damage have grasshoppers done in this vicinity, and what is the best method of destroying them?
5. Is carbon bisulphide a good squirrel exterminator and how should it be used?

It was reported the settlement of the irrigation bonds is now in the hands of a committee who are working diligently and constantly on the subject and are meeting with reasonable success, such as will, before long, lead the people of the district from the land of bondage.

It is considered that blight has practically destroyed the pear orchards of this county, the only pears now known to be free from the disease being those in the orchard now cultivated by Bro. Eckels.

The free distribution of squirrel poison has destroyed large numbers of squirrels, but large numbers still remain to be killed.

Grasshoppers have done no material damage in this township. The State and local papers are full of methods for their destruction.

Bro. Thomas Jacob reported using carbon bisulphide to exterminate squirrels, and gets better results than by any other method. By a special device the fumes are blown down the holes, the holes closed, and that is the last of the family of squirrels. However, care must be taken by the operators that there is no fire about, strictly no smoking being allowed.

Bro. E. C. Shoemaker was presented with a very handsome gold badge by members of the State Grange. The badge was made and inscribed by direction of Sister Werthen and presented to Bro. Shoemaker by Bro. Styles, Worthy Master of Tulare Grange. Bro. Shoemaker is now completing his fifth full term, ten years, as Steward of the State Grange.

Although much spirit was shown in the discussion of several of the subjects, those excellent Grange precepts, "In essentials unity, in non-essentials liberty, in all things charity," were never forgotten nor overlooked. J. T.

Farmers' Mutual Insurance Convention.

The California Association of Farmers' Mutual Fire Insurance Companies will have its regular annual convention at Blanchard's Hall, Los Angeles, Cal., on Tuesday, July 8. All who are interested in co-operation are invited and all farmers' insurance companies urged to be represented and join the organization. There are more than a dozen companies in California operating under the 1897 law, carrying over \$4,000,000 in insurance. Addresses will be delivered at the convention by W. A. Beckett, president, and Rev. C. C. Pierce. There will be papers by P. E. Walline on "Statistics," by G. F. Cromer on "Legislation," by F. E. Kellogg on "Co-operation," followed by discussion in all cases. G. F. Cromer, 212 West Third street, Los Angeles, is State Secretary.

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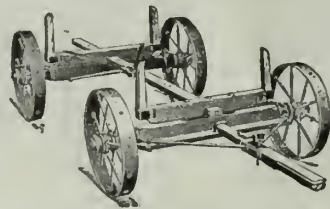
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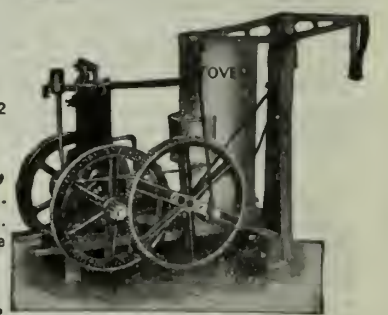


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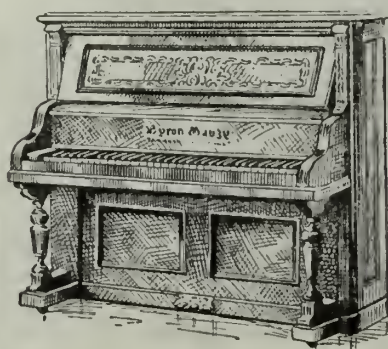
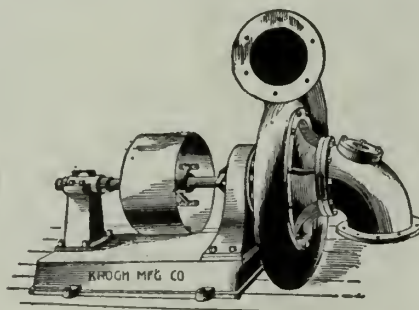
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GOOD ROADS.

The Only Way.

It was dusk and a storm was coming on. He saw two children coming, who had been loitering along the creek on their way from school, so he spoke to them.

"Can you tell me the way to Mr. Burton's place?"

"I know the way," said the boy, "and can go there all right, but I don't believe that I can tell you so that you can find it, and it's almost dark now. You better come home with us and I'll show you the way in the morning. Pa will be glad to have you come if you'll only talk and tell the news."

The first consideration was for the stranger and incidentally for a chance to ride a mile and a half home in his buggy instead of having to walk the distance, and perhaps be caught in the rain.

Said the stranger, "You are very kind, but it is important for me to reach there to-night. Tell me as well as you can."

Then the girl said, "But there's so many roads that go the wrong way and it will be dark. You go with him, Tom, I'll go home alone. Jack'll do your chores and pa won't mind."

"No, no," said the man, "that will not do at all. My horse and I know a good deal about finding a place to put up at night, and I think that we can make it. Do the best you can."

So Tom said, "You turn 'round and follow this road the other way. Keep right in the road. There's one, two, three, four, five. Is that right, Nell? Five wood roads 'at come in; two on the left hand and three on the right hand, and you look out you don't get into one of 'em or you won't get out before mornin' without breakin' somethin'." Then you cross the Hanktown road; you'll know it by the deep ruts the ox teams have made haulin' out saw logs. Bimeby you come to a little glade where the roads fork and run out in six different ways from that glade. You take the one with the big thistle on the left and two mullin stalks about as fur as you kin throw a stone furdur on the other side."

"That ain't right, Tom," said Nell, "that thistle was there last year, and I broke off one of the mullins myself, week before last, to chase off a cow that was in the road. There's an elm tree between the Willer Medder road and the one to take to go to Burton's."

"Yes, and what good'll that do?" said Tom. "There's about forty other elm trees scattered all about there. I'll tell you the best thing you can do. This glade is about a quarter of a mile long and wagons drive over it every way. When you get there you can turn right around to your left hand and follow around the edge of it and count three roads that strike into the timber and you take the fourth. Now, let's see, Nell, if that's right—one, two, three, four. Yes, that's right."

"Don't you have finger boards in this country? Did you ever hear of roads being blocked?" asked the stranger.

"Finger boards! What's them?" asked Nell.

"Why, boards with a finger pointing the way to go."

"But supposin' you don't want to go that way?"

"Well, then the finger points the way you don't want to go. But it keeps on pointing."

"I guess that must be a kind of finger board that the blacksmith has marked on a board with a red hot iron up near Hanktown, only they ain't no finger on it. It says, 'This Road to Hanktown,' but Hanktown is only just over the hill. You can almost see it. No, mister, we ain't got no finger boards around here. Pa says they's too unsociable to have around. Nobody would stop and he wouldn't never have a chance to talk to nobody and get the news with them things around."

"Well, you follow this fourth road about three-quarters of a mile, passing one left; two, left; three, right; four, left; five, right; six, left—passing six logging roads when you strike the main road. There you turn to the right, pass

three houses, but you don't count the old empty one in the vacant yard, and at the fourth house, it's the one that stands out doors, you inquire and they can put you right on to the road that will take you straight to Burton's about 3 miles through the timber furdur on. Got it all straight; think you can find it? Come on, Sis, we must skoot or we'll get soaked before we get home. Good-bye."

"Hold on, young man; both of you get in here," said the stranger, "and I'll drive you home. I'll have to wait for daylight to tackle that string of roads."

"I 'lowed maybe you'd think so," said Tom calmly.

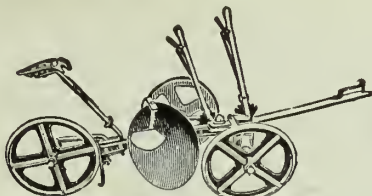
With the rapidly increasing interest in all directions in road-blocking, which is also known as the ten-block system of numbering country houses, the whole country may congratulate itself upon a prospect of ultimately having blocked roads which afford a simple and effective way of finding places and people in the country.

Los Angeles county has just appropriated \$400 more for the expenses of her Highway Commissioner, a part of which will be used to block four roads extending from the county seat in four directions.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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Sold by Druggists, 75c.
Hall's Family Pills are the best.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

Dividend Notice.

MUTUAL SAVINGS BANK of San Francisco,
33 Post Street.

For the half year ending June 30, 1902, a dividend has been declared at the rate of three (3) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, July 1, 1902.

GEORGE A. STORY, Cashier.

Dividend Notice.

CALIFORNIA SAFE DEPOSIT AND
TRUST COMPANY,

CORNER CALIFORNIA AND MONTGOMERY STS.

For the six months ending June 30, 1902, dividends have been declared on deposits in the savings department of this Company, as follows: On term deposits at the rate of 3 1/2 per cent per annum, and on ordinary deposits at the rate of 3 per cent per annum, free of taxes and payable on and after Tuesday, July 1, 1902. Dividends uncalled for are added to the principal after July 1, 1902.
J. DALZELL BROWN, Manager.

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"Greenbank" Pure 100% Caustic Potash
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THE CO-OPERATOR.

The Danish Way.

To THE EDITOR:—The desirability of that form of business organization known as "co-operation" being once admitted, there remain but two questions: How to organize the association; how to organize and conduct the business operations. The first relates to the working relations of the three principal divisions of an association, the members, directors and manager; the second as to whether the goods shall be sold for cash or credit, the division of the profits, growth of the membership, etc. As to manner of conducting the business, division of profits, etc., and everything under the second heading, the English way devised at Rochdale, but never known in Great Britain or Europe by that name, is the most generally followed of any the world over. But the English way of relating the various factors of the association—membership, board of directors and manager—is not followed in Denmark, where the co-operative form of business organization and conduct has reached more nearly complete acceptance, and in more lines, it seems, in proportion to the total population, than in any other country; and this fact, together with the excellent personal character of the Danes, would seem to make their system of organization worthy of study.

In organizing a business undertaking co-operatively, the Danes who expect to become members decide, according to F. N. Fredericksen of San Luis Obispo, as to the sufficiency of the opportunity; then as to the sufficiency of the capital they can raise; then on the ability or sufficiency in character, experience and security which he can give for the capital to be furnished of one out of a number of candidates for manager, whom they have secured by advertisement or otherwise.

Having found an apparently satisfactory manager, they require from him ample security for the capital entrusted to him; pay him by a percentage on the amount of business done (instead of salary), the amount of the percentage being decided on between them, and leave entirely to him the management of the details, in which the boards of directors often interfere under the English and Californian system of organization.

By the Danish system the benefits of any exceptional business ability or individual initiative on the part of the manager is secured, and the chances of friction in an association are reduced, while, at the same time, the benefits of collective control in all larger matters and pro rata division of profits is maintained. The system of organization seems worth studying. F. P. Cook.

San Francisco, June 25th.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JUNE 17, 1902.

- 702,655.—BAG HOLDER—J. P. Adams, Garfield, Wash.
 702,765.—PILLOW SHAM HOLDER—Tillie Bambauer, Volta, Cal.
 702,529.—OIL BURNER—W. N. Best, Los Angeles, Cal.
 702,531.—SOAP CAKE—W. R. Bowen, S. F.
 702,630.—SHEAVE—E. Christensen, Portland, Or.
 702,511.—CONCENTRATOR—Cohen & Gross, Sombrerete, Mexico.
 702,640.—HINGE—F. Dyer, Pasadena, Cal.
 702,784.—POULTRY ROOST—J. H. F. Eversz, Walla Walla, Wash.
 702,613.—GOLD SEPARATOR—C. W. Gardner, Portland, Or.
 702,550.—STEAM GENERATOR—J. L. Groux, Jerome, Ariz.
 702,790.—MUSTACHE GUARD—E. C. Gladwin, Oakland, Cal.
 702,551.—BRONZING MACHINE—G. Hare, Los Angeles, Cal.
 702,446.—VOTING MACHINE—Mahana & Ely, Keiso, Wash.
 702,809.—VALVE GEAR—H. Maxwell, Oakland, Cal.
 702,740.—TYPE WRITER INKER—P. F. Wilson, Jerome, Ariz.
 702,592.—GANG EDGER—A. E. Roe, New Whatcom, Wash.
 702,499.—HAND ROCK DRILL—V. Y. Smith, Oakland, Cal.
 702,510.—LETTER BOXES—Tracy & Gould, Alameda, Cal.
 702,883.—BEE HIVE HEATER—H. Vogeler, Newcastle, Cal.

Land and Water Values in California.

The State of California is particularly alive to the value latent in its running streams. This is largely due to the object lesson presented in the remarkable increase in land values and productive capacity of sections where the water supply has been intelligently utilized. Several thousand dollars were raised by private subscription for a thorough investigation of the supply to be obtained from certain watersheds in the State, and the subscribing organizations made application to the hydrographic branch of the United States Geological Survey for careful measurements of flow and other investigations relative to the existing conditions of forestry and topography upon three typical watersheds. As a result of these studies, conducted by J. B. Lippincott, hydrographer of the Geological Survey in California, it was found possible to obtain an annual output of nearly 650,000 acre-feet of water, or enough to cover annually an area of that extent to a depth of 1 foot, the estimated cost of installed capacity being about \$8 per acre-foot. The water would be obtained from storage reservoirs and from pumping plants to be operated electrically by power generated by the neighboring streams.

It is believed that the addition to the resources of the State of this amount of water for irrigation purposes would be sufficient to support an additional 100,000 people, and would add in farm values fully \$20,000,000 to the taxable property of the State, irrespective of the increase in town and city property, which would of necessity follow.

The Price of Barley.

To THE EDITOR:—Parties in the Davisville grain-growing region, whom there is every reason to believe are well-informed and reliable, say that the warehouses generally are cleared of barley this year, whereas at this time last year they had considerable of it on hand. They also say that in all the barley-growing region from Stanislaus to Colusa the crop of barley is only fair this year. Buyers have been making a quiet but active canvass for this cereal around Davisville at from 80c to 87½c, with as high as 90c reported at Woodland on Monday last for standard and \$1.10 for "brewing" quality. A carload from Meritt station to Wood, Curtis & Co., Sacramento, on June 17th, to be ground for feed, it was understood, went to them at 95c, the grower realizing 90c. It is the opinion of large growers and warehousemen who are in position to see the dealer's side of the market, that growers ought to get this year \$1 for merchantable standard barley, though it would probably be a dangerous speculative movement to hold for more. F. P. C.

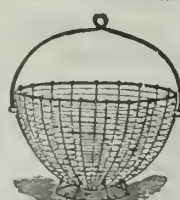
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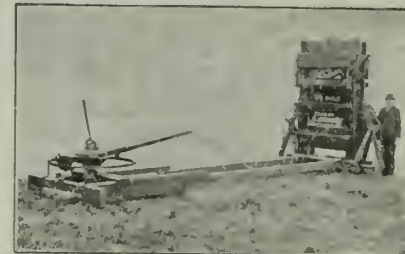
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FRUIT MARKETING.

American Dried Fruit in Switzerland.

From advance sheets of U. S. Consular Reports,
June 23, 1902.

At the request of a San Francisco firm, I have investigated the subject of the importation of dried fruit into Switzerland, and I give below part of a letter addressed to me by Mr. Feller-Villiger, of Zurich, one of the largest dealers of this article in Switzerland:

The import of American dried fruit is always profitable for the seller, for the reason that no other country produces the finer kinds of dried fruit, which have for the last fifteen years been imported into Switzerland and always find a ready sale in this country, no matter whether the home crops are good or bad.

The kinds bought from the United States are principally the so-called apple rings and apricots; then follow pear chips, prunes and peaches. The first two kinds are imported in very large quantities, unless the prices are exceptionally high.

Other countries (Germany and Bohemia) furnish the ordinary dried pears and Turkey and Servia send plums. These kinds of dried fruit have never been offered to me for sale from the United States; in fact I have never known of their coming from that country. These articles are consumed in enormous quantities and are very cheap, especially when the crops are good, and I do not believe that the United States could enter into competition.

The duty is favorable to the import of dried fruit; for apricots, apples, peaches and pear chips (that is, for all kinds without stones), 15 francs per 100 kilograms (\$2 89 per 220 pounds), and for stone fruit only 2 50 francs per 100 kilograms (48 cents per 220 pounds) are charged. As long as we retain this tariff, American dried fruit will maintain its prominent position on the Swiss market.

In view of the fact that the late frost has done great damage to the fruit tress all over Europe, I believe that the prospect is good for a largely increased import of all kinds of fruits and nuts from the United States, notwithstanding the fact that the new tariff now under consideration by the Swiss Government provides for a considerable increase in the duties on these articles.

HENRY H. MORGAN, Consul.
Aarau, May 30.

A Successful Marketing Plan.

TO THE EDITOR:—How much the action of a few may influence the prosperity of a community, and how California fruits may be properly marketed, is well shown by the history of the Walden cannery at Geyserville, as given by the editor of the Gazette, M. H. Hastings. Walden & Co. were and still are distillers of brandy, which had obtained a fine reputation in Europe and America. Five years ago they consented to can and sell some fruit for the growers about Geyserville, the growers to retain the ownership of it and pay the Waldens a percentage. They put up a first-class pack, and made direct connections with the Eastern buyers in New York. Success was immediate, and, by following the same methods, has been continuous since. The capacity of the cannery has been enlarged every year. This year the citizens of Geyserville and vicinity voluntarily gave the company a \$1500 site. There were 101 subscribers to the fund. The advertisement of the company in the Geyserville Gazette indicates very clearly the lines of action by which success has been reached: "Walden & Co., canners and packers. Cannery and packing house at Geyserville, Cal. High grades only. Selected fruit, delicate handling, heavy syrup, expert processing all contribute to make our pack the finest and most uniform in America. New York office, 6 Harrison St., N. Y." Local organization of growers, good and reliable pack,

and direct connection with consuming markets seem to be the chief elements of a successful general plan for marketing California fruits to the best interests of producers. F. P. Cook.

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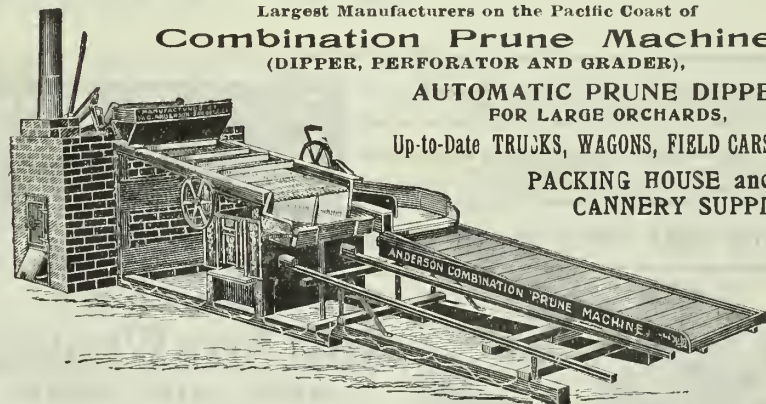
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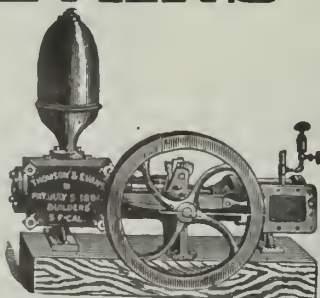
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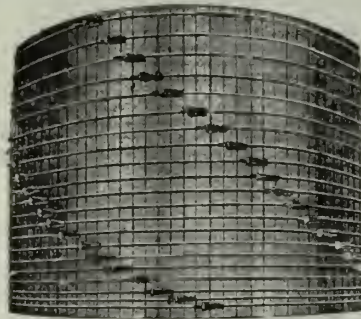
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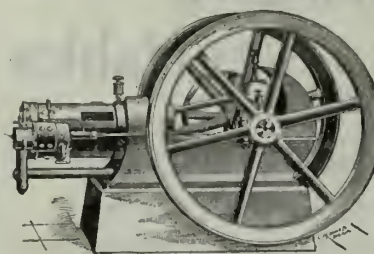
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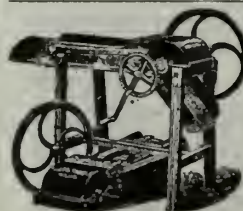
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 2.

SAN FRANCISCO, SATURDAY, JULY 12, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Rose Bushes or Rose Trees.

Whether he shall grow his roses in the bush form which they naturally assume, or train them to single stems, standards or rose trees (which are different names for the same thing), is always a question of interest to the beginner in rose growing. The old grower has usually decided this question to his own satisfaction, at least, and so is apt to stand during the rest of his career as the fixed advocate of one form or the other. The process of reaching such lasting conviction is usually, however, a long one, and the veteran may have crossed from side to side of the question before reaching a firm foundation. The writer's personal experience has been along that line; his plantation was first all bushes, then all standard sized, now about half standards and half bushes, and in another decade he may attain the satisfaction of being settled in his affections, and enjoy being irresistibly all bush or all standard, as the case may be.

We have taken two contrasting pictures from the recent publication of the Chase Rose Co. of Riverside, to which we alluded appreciatively two weeks ago, to call up this matter in the minds of our readers. As we are ourselves still wavering in choice between the two types, we cannot declare strongly in favor of either; still, perhaps, a few impressions may not be tiresome. We are speaking, of course, about roses on their own roots, and when we allude to standards in this connection it is not to a budded rose, but one which has been trained to true form. The low-budded rose, which gives the amateur no easy way of determining whether the shoots are from the stock or from the bud, we cannot consider a very undesirable thing except in the hands of a trained grower, who can tell the source of a shoot at sight and who has time and inclination enough to keep his bush just right. The high-budded standard is better for the amateur if he is going to have budded roses at all, for then he can judge easily of the origin of a shoot. We should, however, insist upon low-standards in budded roses just as we do in fruit trees; the roses budded 3 or 4 feet above the ground are far less desirable, in our opinion, than those budded at less than 2 feet from the ground. We are, however, quite firm in our belief that, except in the case of a few roses which are notably poor growers on their own roots, the amateur should have his roses on their own roots, whether he grows them in bush or tree form. We have made hundreds of very satisfactory standards by selecting the best shoots of plants grown at first in bush form, and know that it is feasible to do it. It has a safety feature also, because injury to the stem can be speedily nullified by growing a new stem, and if one tires of standard

form he can quickly restore the bush form. Such possibilities as this do not inhere in the budded rose except in low budding, and that we have already condemned for what seem to us good and sufficient reasons.

their weak bloom shoots and the clearing out of weak shoots when they come even from good leaders. This we contend is more apt to be done when the grower has constantly before his eye the conception of a small tree form to



California Grown Standard Rose on its Own Roots.

If, then, we come back to the rose on its own roots as the rose for nearly all the people, shall it be a bush or a tree? That is the question which the pictures

be maintained. It is to be expected, of course, that he will not attempt to maintain this form with the hedge shears, but will maintain it by shorten-



How the Rose Grows in Bush Form in California.

suggest and each must answer it for himself, for it is largely a matter of taste. Good, strong growth of wood and large fine flowers can be had with either form. It has always seemed to us that the standard form was stimulative of better culture. The secret of having fine roses, after the moisture and fertilizer is looked after, is to regulate the amount of blooming wood the plant is to carry and to be sure that it is all new and strong. This means that there should be continual pruning out of old wood which can only yield

ing in and by turning growth, by choice of buds, wherever extension is desirable. Doing these things which are essential to the growth of a decent tree form also ministers to the choice of the best wood to make that tree and the rejection of inferior wood. If that is done one is sure to have the best roses his local conditions of soil and climate and moisture supply will allow.

With the rose in bush form the incitement to this work is much less. The natural bush form gives a very agreeable outline, and the temptation is to

let it alone until it becomes a mass of brush, through which new shoots have to push out strongly to get to the light. The plant is allowed to carry too many flowers, and as a result they are apt to be light and small. When the resolution is reached that the large plants must be trimmed, it is found almost impossible to reach the interior except by beginning at one side and working straight through, leaving a few good branches of the more recent growth and pulling and cutting out all but they. This, of course, restores the bush by starting a fresh growth all through, and it is a good thing to do, but it is such an undertaking for an amateur who does his own work that it is apt to be deferred two or three years too long.

Still the large bush form seems the most natural and best for a large lawn and produces, according to our notion, the more pleasing effect. The pictures are evidence on that point. The bush is better for general aspect, the standard is better for fine roses. This is about the state of our own mind on this interesting question. It is commended to our readers for such discussion and contribution of experience as are suggested to them.

North and South.

The Sacramento Bee has an excellent annual issue calculated to attract the attention of home seekers to the advances of the central and northern portions of the State. The edition is prepared with great care and much good material is set forth. To our own taste the work is injured by the labored effort which is made to show the superior producing achievements and capacity of the upper parts of the State as compared with the district south of Tehachapi. We are aware that this effort is held to be justified by what some people at the south have said about the upper district, but this can be hardly held to be a justification. There are a few people in southern California who came in by the southern route and have never had a chance to see what the balance of the State is like. They are sometimes loud and irritating in their talk, but they should not be taken as representatives of the south. It is not brotherly to say sharp things of the south in retaliation for such misrepresentations.

The southern California people are broadminded and loyal to the whole State. They are doing much for the development of the whole State. In almost all of the rapidly growing districts at the north you will find southern Californians who have brought capital, enterprise and knowledge to push development. We think the Bee would have done better if it had held aloof from comparisons which are proverbially odious.

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E. J. WICKSON. Horticultural Editor

San Francisco, July 12, 1902.

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The Week.

Good weather for fruit ripening and for harvest work, absence of hot winds and the general disappearance of that other blasting agency from which too much was anticipated—the grasshopper—keeps people busy and contented. The season is progressing very favorably, as a rule, and will push California another good point forward along her honorable career. The vast concourse of visitors which will fill the State next month will find things lively and interesting and will carry back good reports of California in the matter of active development of unique and wonderful resources. The beginning of the new rainfall year was celebrated with light showers at the extreme north and south of the State, but, fortunately, not enough to interfere with the pleasure and profit of our dry summer endowment.

Wheat is firm and higher for shipping. Only one clearance of wheat is reported and some flour has gone to Pacific points. Barley is temporarily firm, as there is a good demand for old feed and new feed is steady. Oats are weak and slow, old being held above quotations in some cases, but buyers are shy and are bidding below quotations: the latter are therefore largely nominal. Corn is unchanged here in spite of Eastern excitements: there is little offering and less wanted. Hay is in better demand and choice new is firmer. Millstuffs are scarce and high. Beans are quiet and unchanged. Meats are firm: large hogs have advanced still another point and are reaching the prices of medium and small. Butter is slow but firm for both the best and the cheapest, while medium grades are in excess. Cheese is in good request at full figures. Eggs are cleaning up better but are not higher yet, though the outlook is good. Poultry is slow and no better in prices: there seems to be little wanted and that at low rates. Potatoes are somewhat easier, but old potatoes are higher. Onions are steady and other vegetables cheaper, except peas, which are scarce and firm. Receipts of apricots are in better condition, but prices keep down. Peaches are abundant and low. Citrus fruits are dull except that there is a fair demand for choice lemons. Dried apricots are arriving freely and in good demand at low figures; 5½ cents is being offered in the country for fruit in the sweat box, but buyers cannot get as much as they want at that rate. Prunes are being sold short at 2½@2½ cents while sellers are bidding one-quarter of a cent less. Selling short promises to be dangerous business with farmers this year.

Almond futures are selling at 11@11½ cents for Hatch varieties; 9 cents for softshell and 6 cents for hardshell. There may be some surprises in almond and walnut prices also this year. The world's supply bids fair to be short. Peanuts are higher at the East and should advance here. Hop dealers claim to have two-thirds of this year's product under control and are actively bulging prices. We have heard of contracts up to 16 cents and quotations up to 18 cents per pound. Crop prospects abroad are said to be favorable to prices. Honey is in dispute and quiet, though firm. Wool is firm and well cleaned up. The demand is good at full rates.

Prune and walnut growers should read the reports from Bordeaux which are printed upon another page of this issue. The same disfavor of the season has, we believe, seriously injured the almond crop in European districts. The news comes just in time to help the California prune growers, and we are not surprised that the meeting in San Jose on Saturday last passed a resolution to the effect that growers will hold for not less than a 2½-cent basis. This decision was largely influenced by the statements made by Col. Hersey, who pointed out that the hold-over crop is only about 15,000,000 pounds, as against 85,000,000 a year ago. The Oregon and Washington crop is only a half crop. Reports from Europe show that part of the world will need from thirty to forty million pounds to supply its shortage. The crop in the Santa Clara valley is estimated at only seventy-five to eighty-five million pounds. All in all, prunes are worth more, he said, and should bring more. Extra large sizes and small sizes are worth a premium over a 2½-cent basis. He backed up his view of the market by offering to take 1600 tons of various sizes at the price he indicated.

This condition, which encourages growers to be stiff in their demand for a price which they think reasonable, should also encourage the maintenance of the general association if it is a possible thing. At the meeting mentioned above a resolution was adopted pledging all to urge upon their neighbors the desirability of voting upon the amendments proposed to the by-laws of the California Cured Fruit Association. The pursuit of a quorum for that body's meeting is being continued and votes coming in more freely than before. These ballots, it is claimed, are coming in as a result of the canvass being made for them. Quite a number of members are in the field canvassing for votes as volunteer workers. They are interested in securing a quorum in order that the by-laws may be amended. If not, no matter whether the association is to continue or not, members are still members for forty-eight years, regardless of the question of the delivery of their fruit. Thus members seem to be seeking release: perhaps they may, however, find a way to keep together. On Wednesday 200 more votes were needed to make a quorum.

The wide battle between the sheep and cattle men has taken acute form in eastern Oregon, where, a dispatch says, the carcasses of 400 slaughtered sheep lie on the ranges of northern Grant county as the result of two sheep shooting affrays in the stock district. All of the sheep were slain by settlers, who resent the trespass of outside stock on the Grant county range. The stock situation in central eastern Oregon is very strained on account of the range overcrowding, and shooting affrays take place every day or two, though on a smaller scale than those reported. News of a pitched battle between the settlers, who are principally cattle men, and the forces of the sheep men is expected.

Attendance at the University summer school is larger than last year and reaches nearly 900. Prof. Fernow, head of the college of forestry of Cornell University, is now delivering his course of lectures to a very much interested audience, and will continue for two weeks to come. Then Prof. Henry of the University of Wisconsin will begin his work in animal feeding, which we trust will commend itself strongly to our readers. Prof. Wickson is now lecturing on California fruit growing and will begin on irrigation July 11 and continue until July 24, when Mr. Thomas of Montana, Prof. Wilson and others will take up the work. The summer school is very active and interesting.

QUERIES AND REPLIES.

Pear Scab.

TO THE EDITOR:—I send you a sample of small pears. I have had nothing like it before. They have had a few brown spots like the apples, for which we have sprayed with the Bordeaux mixture. The trees were all sprayed in the winter with the winter wash of lime, salt and sulphur. We have sprayed twice with the Bordeaux mixture and once with kerosene emulsion for woolly aphs and leaf lice. We also have put tobacco dust around the roots of apple trees for three months. Our apples are dropping badly. I do not know whether from leaf lice or the late frost.—READER, Calistoga.

The sample of pears which you send shows chiefly the work of the pear scab; that is, the black patches which deform the fruit are the manifestation of this fungus. The white spots on one of the pears is evidently the healing of mechanical injury of some kind, perhaps by some biting insect. This disease should have been almost disappeared by your winter spraying with lime, salt and sulphur, and the remainder of it should have been successfully met by the Bordeaux mixture, for both these sprays are active fungicides, though recent experience seems to indicate that Bordeaux is the better dose for scab. Judging from the size of the specimen it is possible that your Bordeaux spraying was not done thoroughly enough, because only a few marks upon the leaves can be seen, and the fungus seemed to be growing upon places which had not been reached by the spray. At any rate the accepted and usually successful remedy for this pear scab is Bordeaux mixture, and used in its winter strength just before the buds begin to open and repeated in summer strength after the blossoms have fallen. It is impossible to state to what the dropping of the fruit may be due. There is a natural drop which is beyond prevention and the causes of which are not explained. There is also dropping for lack of pollination, etc.

A Notable New Yellow Cling.

TO THE EDITOR:—I send you to-day a box containing two varieties of peaches. The two larger peaches are samples of a new cling, which originated on my place. The two smaller fruits are Hale's Early. Both varieties are growing in my experimental orchard, and I send you the latter to show you how much earlier the cling has ripened than the Hale's Early under the same conditions. I would like to have you give me your opinion of this cling peach. The tree from which these fruits were taken was not thinned, so the peaches are not as large as they otherwise would be. As you know, this season is about two weeks later than our ordinary years, and, under regular conditions, I think it would be safe in saying that this new cling would ripen about the 20th of June. It seems to me that this peach will fill a long-felt want by the canners, for its extreme earliness, combined with the fact that it is very firm and clear yellow to the pit, ought to make it a very valuable addition to the line of canning peaches.—G. C. ROEDING, Fresno.

Our first impression of the peach is that it is the most notable new variety we have seen for a long time. Mr. Roeding's statements are borne out by the specimens. The cling is a full-sized, rich-colored yellow, with a deep red cheek. It is notable, however, that the red comes away wholly with the skin, leaving a healthful, clear, yellow flesh. The pit is also free from red. Evidently the fruit will please the canners from that point of view. The earliness is also notable, for the Hale's Early specimens are not much over half grown (much later than they are with us in Berkeley), and yet the cling is dead ripe, soft and juicy. The size is ample for canning. A yellow peach of such character, coming so early, should also be valuable for shipping, and in lengthening the drying season should also be important, for it is a rich, heavy-juiced peach. If we are not mistaken, the variety will be famous.

Grasshoppers.

TO THE EDITOR:—Would it be useful to dig a trench along under the first row of orchard trees on the side next to the open field which now has grasshoppers in it, and burn sulphur in the trench? How long will they remain?—READER, Tulare county.

If the grasshoppers have not wings, it is not necessary to burn the sulphur, as you can catch them in the trench in the way discussed in the PACIFIC RURAL PRESS of June 7th and also described on page 6 last week's issue. We do not see that burning sulphur continuously, which would be very troublesome and expen-

sive, would add anything worth while to the trench system. If the grasshoppers have wings, neither your trench nor your sulphur burning would be of much account, though you can drive them away or keep them out of an orchard by building any sort of bonfire which will give plenty of smoke. This will drive them away to other unprotected places. We can not tell how long they will remain. Usually, if they have a good appetite and are in good numbers, they will stay until they eat up everything green and then fly away to something else that is still green. On the other hand, many times so many of them are parasitized while young that they do not reach the wing form. It is impossible to lay down any particular rule, because so much depends upon the condition of things at the time.

Persian Fat-Tailed Sheep.

To THE EDITOR —Please tell us what you can about the value and characteristics of the Persian fat-tailed sheep.—CHAS. E. OGBURN, Sonoma county.

These sheep have been in California for over a decade and have secured some popularity. They were brought from Persia by the American Minister in 1891 and presented to the United States Department of Agriculture. They were sent to California

expensive fur known as Persian lamb, should be given a thorough trial in the United States. 2. The fat-tailed sheep of the Kirghiz Tartar steppes of northern Turkestan and southern Siberia should be given a trial on the ranges of the northwest, where climatic conditions demand great hardiness. It appears reasonable that they will endure rough treatment better than sheep bred for centuries in the mild, moist climates of western Europe. 3. The whole subject of the native sheep, both wild and tame, of central Asia and Transcaucasia, should be thoroughly investigated by experts in sheep breeding, and provision made for experimental importations.

The Persian sheep, as bred by C. P. Bailly & Sons and exhibited at State Fairs, have attracted much attention, and this experienced firm of breeders thinks well of them. Of their general aspect, the accompanying illustration showing the animals at the University Experiment Station, will give a good idea.

Plum Aphis.

To THE EDITOR :—Please inform me through your query column what the enclosed prune leaves are damaged by, and what is the remedy, if any. I have just come into possession of a prune orchard of five

ing the week. Fogs have prevailed along the coast and light rain has fallen in Humboldt county. All crops are in good condition and maturing rapidly. Grain harvest is progressing in all sections. The yield will be light in the southern districts, but about average in other sections. Hay baling is in progress; there is a large crop in the central and northern counties. Beans are in bloom in San Luis Obispo county. Pasturage is good in most places. Corn, beets, hay and potatoes are doing well. Vineyards continue in excellent condition and the vines are heavily laden. There is a large yield of nearly all varieties of deciduous fruits. Canning and drying are progressing.

SAN JOAQUIN VALLEY.

Clear weather has prevailed during the week and the temperature has continued below normal. Wheat harvest is progressing rapidly, and in many places the crop is turning out much better than expected. In Madera county the yield of wheat is reported fully up to the average. The grain is mostly of excellent quality in all sections. Grasshoppers are commencing to leave Merced county, and have not yet appeared in some parts of Fresno county; there are no reports of the pest in other sections. The third crop of alfalfa is being cut. Hay baling is in progress. Corn is making good growth. Pasturage is drying up, but is still abundant in most places, and stock are in good condition. Vineyards are unusually thrifty, and a heavy crop of grapes is predicted. Apricots are yielding a large crop and nearly all other deciduous fruits will be about average. Canning and drying are progressing.

SOUTHERN CALIFORNIA.

Continued cool weather has retarded the ripening of deciduous fruits. Fogs have prevailed along the coast,



The Persian Fat-Tailed Sheep as Bred at the Experiment Stations of the State University.

and have been bred there since by C. P. Bailey and the experiment stations of California. The full name of this breed is given as the Bayazit Broad-tailed sheep of Kurdistan, Persia.

J. H. Barber, who had charge of the sheep for several years at the University Experiment Station near Paso Robles, states that in California they have been crossed with various standard breeds with excellent results. It appears that the Persian wool is very long in staple but coarse in texture. In crosses with French merinos the result was a long fiber wool, which sold at 2 cents per pound higher than pure merino wool. The cross also greatly improves the mutton qualities of the merino, and is a much hardier and a better rustler for food. One California grower says of these Persian-Merino crosses: "They are omnivorous feeders and great rustlers for food. If there is anything betwixt heaven and earth they'll get it!"

When crossed with Shropshires very hardy sheep, especially adapted to mountain ranches, were obtained.

California is apparently well adapted to Persian sheep. In all probability the pure bloods will be best adapted to other dry, hot regions, such as Arizona and New Mexico, but they should also be tried, especially for crossing, much farther northward.

Prof. N. E. Hansen had a comprehensive sketch in the PACIFIC RURAL PRESS of September 1, 1900. He reached the following conclusions: 1. The breed or breeds of sheep in central Asia, which furnish the

acres, and find the trees so afflicted.—BARTON, Napa.

The insects are the plum aphis. The remedy is thorough spraying with kerosene emulsion, using a nozzle which will throw the spray against the under sides of the leaves. Spraying should be done at once else the leaves will curl, the fruit, if any, will be covered with black smut, and the tree brought into distress. Before the end of the summer the insects will be largely eaten up by their enemies probably, but they will before that time have done great injury to the tree and fruit.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 7, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been generally cool and partly cloudy during the week, but not unfavorable to crops. Grain harvest continues. Wheat and barley are yielding heavy crops in most sections and the quality is excellent. There are no reports of damage by grasshoppers, but fires have destroyed large fields of grain. A heavy crop of hay has been harvested and baling is now in progress. High wind on the 1st inst. caused very little damage. Heavy shipments of deciduous fruits are being made from Vacaville. All fruits are ripening rapidly, and canning and drying are progressing. Grapes are looking unusually well and will probably yield a large crop. It is reported that the orange crop will be light in the vicinity of Oroville. Olive trees are heavily laden.

COAST AND BAY SECTIONS.

The temperature has been slightly below normal dur-

and light showers have fallen in the extreme north, but no damage to crops has resulted. Grain harvest and hay baling are progressing; these crops are light in most sections. Potatoes are of good quality, but the yield is light. Walnuts are dropping in some places. Citrus fruits are in good condition. Water for irrigating is very low.

LOS ANGELES SUMMARY.—Cool, cloudy weather favorable for fruit. Water lower than last year in places, but deficiency will be made up by newly developed wells.

EUREKA SUMMARY.—Crops in good condition and maturing rapidly, promising a very heavy yield. Hay harvesting continues. Green feed is abundant.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 9, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.22	.22	T	.03	60	48
Red Bluff.....	.00	.00	.00	.00	64	56
Sacramento.....	.00	.00	.00	.00	64	54
San Francisco.....	.00	.00	.00	.00	74	50
Fresno.....	.00	.00	.00	.00	98	54
Independence.....	.00	.00	.00	.00	88	48
San Luis Obispo.....	.00	.00	.00	.00	80	46
Los Angeles.....	.00	T	.00	.00	98	52
San Diego.....	.04	.04	.00	.00	68	60
Yuma.....	.00	.00	.00	.07	110	64

THE IRRIGATOR.

Irrigation Methods in Arizona.

NUMBER II.

From Bulletin No. 41 of the Arizona Experiment Station, by
A. J. McCLATCHIE, Agriculturist and Horticulturist.

GRAIN.—There are two methods of putting in grain in southern Arizona. Either the fields are plowed quite dry and, after being harrowed, seeded in this condition; or the fields are thoroughly irrigated before plowing, and the seed sown in moist soil. If the former method is used, irrigation as soon after sowing as possible is necessary to cause germination of the seed. If sown in moist soil and covered deeply with an ordinary harrow or with a disc harrow, it will usually germinate well and make a good stand without irrigation following the sowing. The results from the two methods of putting in grain are consequently quite different. Irrigating the dry soil after sowing the grain causes it to bake and the surface to remain in a hard condition, unless a harrow is run over the field before the grain is too large to be injured; and in any case, the condition of the soil is such that another irrigation will be needed before that sown in moist soil will show the need of water. The compacting of the soil by the irrigation following seeding causes a loss of moisture more rapidly than from the fields sown in the other way; hence the consequent need of earlier and more copious irrigation. Fields in which the seed is sown in moist soil usually need no irrigation for two or three months, during which the grain will make an excellent growth and send its roots deeper than in soil that has been irrigated soon after the sowing of the seed. By the time the moisture stored in the soil before sowing is evaporated from the soil and from the plants, the surface of the field will be covered by the growing grain. Consequently, when water is applied evaporation from the surface of the soil is not as rapid as it would be from bare soil; and the soil does not bake, as in the case of that irrigated when bare. Hence, the soil of such fields remains in much better condition than that in those irrigated soon after seeding; and the grain has an opportunity to make a better growth and give a larger yield.

It has been shown by our experiments that the wheat sown in moist soil not only required less water to bring it properly to maturity, but gave a greater yield. The amount of water used was about a seventh less than from the other field. This makes quite a difference in the net returns per acre, as well as in the net returns per foot of the water applied.

Grain sown in soil that has been thoroughly moistened to a depth of 2 or 3 feet, by the application of one-half to three-fourths of a foot of water, will need no irrigation until March or April—depending on the season—and will need but one or two subsequent irrigations to produce a good crop. As long as the young grain is making a thrifty growth water should be withheld. When it begins to wilt slightly during the heat of the day, or about the time it begins to send up grain stalks, water should be applied. The last irrigation should be given just about the time the grain is in milk. If given water between those two irrigations, it should receive only enough to keep it growing thriftily, but not enough to make it unduly rank.

It will be observed that the amount of water used in growing grains is comparatively small. This is due to the time of the year during which these crops are grown here, the season of sowing extending from the early part of November to the middle of February. The summer being too hot for them, they are grown during the cool part of the year, most of the growth being made from January to April, when evaporation is comparatively slow. Crops of grain are sometimes grown with the application of much less water than given in the tables. As stated above, it is necessary either to irrigate the soil thoroughly before plowing or to irrigate soon after sowing the seed. With one irrigation subsequent to this, a good crop can sometimes be grown in a soil retentive of moisture, the total amount applied not having exceeded 1 foot. This possibility of growing grain here during the cool part of the year enables us to produce a crop with less water than in cooler, less arid States, where the crop is grown during the warm part of the year.

GRAPES.—The first season after setting, grape vines need frequent irrigation throughout the season, to enable them to become well established. Two irrigations a month will be beneficial in porous soils, and one irrigation per month should be given in most other soils. The second season the vines will do well with less frequent irrigation. During later years the greater part of the water needed to produce a crop may be applied during the winter—from January to March, inclusive. Water to the depth of 2 feet may be applied to advantage in most soils during this period.

When the blossoms begin to open water should be withheld until the young fruit is about the size of peas. One or two thorough summer irrigations will be ample to produce a good crop. No water need be applied from August to January. The total amount needed during the year is not over 3 feet.

MELONS.—Melons are planted during March along previously moistened furrows. For watermelons the furrows are made 8 to 10 feet apart and for muskmelons about 6 feet apart. Water is run through the furrows and about two days later the seed is planted along one side, just above the water line. During favorable weather no further irrigation is necessary until after the young plants appear. But if the weather following planting be too cool for the germination of the seed, the soil about them will often become too dry. In such a case an irrigation a week or two after planting will be important. After the first irrigation the furrow should be cultivated up and a fresh one made for subsequent irrigations, which should occur about twice a month during the first two months. Thereafter more frequent and copious irrigation will be desirable.

While watermelons and muskmelons require a large number of irrigations during their growth, the amount applied to the crop is not correspondingly large, as is shown by the record of the water applied to the watermelon crops during the past two years. This is due to the distance between the rows and to the fact that during the early part of their growth only the furrow along which they are planted is moistened. Thus, during the first half of the life of crop, only a small portion of the soil is kept moist; at no part of its growth is all the surface commonly moistened. Furthermore, the vines grow so rapidly that undoubtedly a larger proportion of the water is used by the plants and a smaller proportion lost from the soil than is the case with many crops. The covering of the surface by the vines would also cause less loss from the soil. Thus, a crop consisting of a product containing a large amount of water is produced with an amount of water that is smaller than might be expected.

ONIONS.—Onions are irrigated through furrows, or by flooding, the former method being preferable in most soils. Seed is sown during September and October, either broadcast in beds, from which they are to be transplanted, or in drills 18 to 24 inches apart. From the time of planting until near the time of harvesting they need to be irrigated frequently and to be cultivated after each irrigation. The crop of 1899-1900 received twenty-nine irrigations.

The growing of onions involves the use of a large amount of water, as well as the expenditure of much labor. Though they are shallow-rooted and do not require that the soil be deeply irrigated, they must be irrigated through such a long period—about ten months—that a large amount of water must be applied to produce a crop. A large percentage of this is lost by evaporation. It will be observed that only about two-tenths of a foot was applied at each irrigation, enough water to wet the soil only 8 to 10 inches deep. Nearly all of the water of the upper 2 or 3 inches would be lost by evaporation, as well as considerable of what reached the soil below this stratum.

ORCHARDS.—Since it is important that trees be properly irrigated from the first, it will be well to begin the discussion of orchard irrigation with the setting of the trees. During the first year all varieties of fruit trees, whether deciduous or citrus, need to be treated in about the same manner.

Before the trees are set furrows are run near the lines of the tree rows for the early irrigations. Usually water is run through the furrows before the trees are set and as soon thereafter as practicable. The furrows should be cultivated up within a month and fresh ones made for each irrigation. The young orchard should be irrigated only along the tree rows, and the soil should be kept moist to a depth of several feet. This will induce the trees to send their roots down deeply, instead of out laterally near the surface. Since much depends upon the treatment of the orchard during its early growth, it pays to give the trees special attention the first season.

As the trees get older they will need less frequent irrigation during the growing period and more of the water may be applied during winter. After they are four or five years old at least three-fourths of the water needed may be applied to deciduous trees during January, February and March. The remainder needed may be applied when water is most abundant during summer. The furrows do not need to be cultivated up after each winter irrigation; but they should be renewed as often as once a month, if a green manuring crop is not grown in the orchard. Such a crop is an excellent check to the flow of the irrigating water, as well as a benefit otherwise. When the winter irrigation is finished the soil should be thoroughly cultivated to a depth of 8 to 12 inches, and the surface permitted to remain dry until the time of the summer rains.

Where the soil is of the proper character, the tree roots penetrate to great depths, enabling them to thrive though the surface stratum be quite dry. In the station orchards their roots are abundant at a depth of 12 to 16 feet and many of them penetrate to a depth of more than 20 feet. This characteristic makes it possible to store in the soil during winter much, if not all, of the water needed to produce a good crop. To one orchard at the station farm all of the water used by the trees during the past three seasons has been applied from December to March, while the trees were dormant above the surface. That they were not dormant beneath the surface was

shown by an examination made Feb. 20, 1900, revealing that at a depth of 12 to 16 feet, even, young roots 3 to 6 inches long had already grown.

As demonstrated by experiments, a deciduous orchard may be kept in excellent condition and produce good crops of fruit if irrigated during the winter only. In fact, results from the winter-irrigated orchard were better than from the same orchard irrigated during earlier years through the summer, and better than from other similar summer-irrigated orchards the same seasons.

Aside from the difference in the results obtained, and the amount of labor involved, it should be taken into consideration that the water available during the winter has a much less value, upon account of its comparative abundance, than the water available during the summer. Even if a greater amount was used by the winter-irrigating plan, it would still be the cheaper method.

Citrus orchards, upon account of being evergreen, need somewhat different treatment than do deciduous orchards. In deep soils a large part of the water they need during the year may be applied during the winter, as recommended for deciduous orchards. But they commonly need more water during the summer than do the latter. However, it does not seem to be wise to give citrus trees sufficient water during summer to keep up a fresh growth during the hottest weather of July and August; and from Oct. 15 to Dec. 15 water should be withheld entirely. Fresh growth made during the middle of summer is apt to be injured by heat, and growth made during the late fall is apt to be injured by cold. The best time to induce unprotected citrus trees to make growth seems to be from March to June, inclusive.

PEAS.—If sown from Nov. 15 to Feb. 15, peas may be planted just as they are in regions where they are not irrigated, and furrows for irrigation made after the peas have made some growth. To make this possible, the soil in which they are to be sown should be thoroughly irrigated and well plowed and harrowed previous to sowing. As long as they are making a thrifty growth it is best to withhold water.

If sown at other times of the year than the season mentioned above, it will usually be necessary to sow the peas along previously made furrows, or to make furrows directly after they are sown. Running water through these furrows is usually necessary to bring the peas up during the warm weather of early fall and early spring. In whatever way or at whatever time they are sown, it is best not to keep the soil too wet and to cultivate it after each irrigation.

(TO BE CONTINUED.)

Profit From Irrigation.

Some of the advantages of irrigation may be obtained from the following extract from a speech of Prof. C. W. Childs at Santa Clara Farmers' Institute:

Eight or nine years ago I examined the rivers of Santa Clara county and induced my neighbors to assist me in bringing water down from the hills near Almaden. People were slow to come in, but we got our company organized, and in four years our ditch was finished. We find that it costs about one-tenth as much to irrigate from the ditch as from the wells, and from the ditch there is the great advantage derived from the sediment. As to the practical results of irrigation: When the last dividend was declared by the California Cured Fruit Association I received about three times as much money from a given acreage than my neighbor, who did not irrigate, the difference being in my favor both in size and weight.

THE APIARY.

Foul Brood in San Diego County.

By COUNTY BEE INSPECTOR J. M. HAMBAUGH in American Bee Journal.

During the years 1859 and 1860 there were upwards of 6000 colonies of bees imported from the East into this State [California]. They arrived in better condition, apparently, than those of former years, yet, owing to the fact that large numbers of these were infected with foul brood prior to their purchase and shipment, together with the effects of so long a voyage, probably half of the whole number was lost. Many of the remainder have since died, or now linger in a diseased condition, which is infinitely worse for the parties owning them than if all had died at once.

Thus the result has been bad for all concerned, for while some have lost their money others have injured their reputation, besides paralyzing for a time an important branch of productive industry.

So wrote Mr. Harbison in 1861, as quoted from his "Bee Keeper's Directory." Just think of it! Three thousand colonies of foul broody bees allowed to enter our State and be indiscriminately scattered all through the country! From the reading we would infer that the 3000 colonies were a putrid mass of dead brood, germ-inoculated honey, wax, etc., and this with the "many that lingered in a diseased condition" destroyed the reputation of many bee keepers and for a time paralyzed the bee keeping industry.

This, you will notice, was over forty years ago,

and the bee keeping industry has survived this calamity, and many might imagine that we were safe from a return of this extremely dangerous contagion. Let us not deceive ourselves. The hydra-headed monster is abroad in the land, and I very much doubt if it has ever been thoroughly banished from our State since its introduction over forty years ago.

PRESENT PREVALENCE—I never had any acquaintance with this disease until I came to California and was appointed foul brood inspector of our county (San Diego). February 13, 1900, is the date of my first introduction. I had often wondered if I would recognize the disease. I had already come in contact with many badly afflicted bees, and worried Prof. Cook's patience (thanks to him) with various samples, but they all seemed to lack the chief characteristics, viz., "the elastic ropiness, coffee color, and glue pot smell." Here was a case, however, that would not admit of a doubt, and I was obliged to put my first seal of condemnation upon thirty colonies. Since that time I have found over 300 cases, and it extends over an area of 70 square miles and approximates a total of nearly 7000 colonies. This will make one diseased for nearly every twenty-three healthy colonies. This, of course, does not include many apiaries not visited, which would naturally lower the per cent.

A LAW NEEDED.—I also found the disease in spots, with a central location, traceable to imported diseased bees from foreign parts, pointing very clearly to the need of a law prohibiting the moving of bees from one locality to another without a certificate from a duly authorized inspector that such bees are free from contagious diseases, etc. The bee keeping citizens in these unfortunate localities are vehement in their expressions, and do not request such a law, but simply say they demand it. They are the victims of unscrupulous parties who have simply unloaded their venom upon an innocent purchaser, not only to poison him, but to contaminate and possibly ruin an entire community.

In the name of justice, bee keepers of California, will you not co-operate with us and see that our law makers frame and enact a law that will protect us from such an unnecessary contagion among our bees? The dread disease (foul brood) is among us, and without a proper knowledge of it and its cure it is to be dreaded.

Let me tell you Mr. S. was a purchaser of over 100 colonies of bees in an adjacent county two or three years ago. There was always trouble among them, and, not being informed as to the gravity of the situation, he took no pains to read up. I found him, about one month ago, with thirty-five colonies, and the surrounding dead ones bore strong evidence of the man's careless incredulity and ignorance. Of the thirty-five colonies, thirty-three were in all stages of the disease, and one of the remaining two was queenless. Hence he had but one sound colony in the yard. And this is not all. Every neighbor's bees within reach of this apiary were more or less afflicted. A widow moved twenty-three colonies within 1/4 mile of him last fall, only six or seven months previous to my visit, and I found nineteen out of the twenty-three inoculated with the disease and had to be condemned.

I could give other instances in which we have reason to be apprehensive, but I will close by reiterating my previous position, that box hives and stationary combs should be done away with by legislation. They are a nuisance to the industry, and exceedingly unprogressive. Let us hear from some of our inspectors upon this subject.

HORTICULTURE.

The Robe de Sargent Prune.

TO THE EDITOR:—The article credited to the San Jose Mercury in your issue of the 28th of June, extolling the profitability of the above variety of prune, is being widely circulated and copied, and is calculated to do considerable injury to such as are contemplating setting out new orchards by leading them to select the Robe de Sargent prune.

The orchards cited in the article are exceptional, from the fact that the natural moisture is much nearer the surface than in most other sections of our valley, supplying the trees with a superabundance of moisture, which may in a great measure account for the productiveness of this variety of prune thus located.

I have in mind four other orchards, my own included, of the Robe de Sargent prune, from 3 to 4 miles from the Fishers, or Coyote, nearer to Eden Vale, in as good if not better soil, which are ten years old or over and have never borne more than a sprinkling of fruit. They are fine, large prunes, of excellent quality, but in such limited quantity as to be but little short of a failure. An orchard of this prune, as it works in our locality, is more than disappointing. The trees blossom profusely from head to top, the fruit sets and all indications are for a good yield, but then, without any apparent cause, most all drop. We are thus encouraged by the prospects of a good crop until too late to graft the trees over to some more sure bearer. So it has gone on

from year to year—we following a delusion. I have found that the rows next to the French prunes bear no better than those more remote.

I would advise all contemplating setting out this variety of prune to halt and take no chances in which the odds will be against them.

Eden Vale.

E. VAN EVERY.

Fruits in the Selma District.

By VIRGIL M. PINKLEY, Selma Union High School Class of 1902.

The raisin and fruit industries may fairly be said to represent one-half of the vast agricultural wealth of Fresno county. In the vicinity of Selma this is especially true, for within 5 miles of this busy little city more than half the land is in vines and trees. Land thus improved is more valuable and brings larger returns than land in alfalfa or grain. As one views the surrounding country from the tower of the water works, the highest building in Selma, the level plain reminds him of a net, the meshes of which are formed by the interlacing roads and ditches. The meshes themselves are one green hue, but the green of orchard, vineyard, pasture, meadow, shade tree, and of growing grain form a pleasing contrast. There is evidently a greater acreage in vines than in any other single crop, while peaches come next. Besides these two main fruits there seems to be an almost endless variety of fruits, more or less important. Pear, prune, apricot, nectarine, and mixed orchards are thickly interspersed. There are a number of vineyards and orchards which cover an entire section, while vines or trees are cultivated on every small farm. Viewing the landscape from our high position, we do not wonder that there are no very poor people in this neighborhood.

There is labor with good wages for every one who desires work. The immense crops demand hundreds of laborers, and to this is due the fact that more money circulates among the poor people in California than elsewhere. Fresno is noted as the center of the raisin industry and many tons of the raisins and dried fruits handled there come from Selma. Aside from shipments of private individuals to other places, four large packing houses operate here during the fruit season. The raisin grape has been one of the most important factors in the development of our great country. It was found that the soil, when properly irrigated, would raise as fine a raisin grape as can be produced in the world. The pioneer farms were nearly all set to vines, and many twenty-year-old vineyards are yet in good bearing. Many of the most prosperous farmers around Selma are vineyardists, having paid for their homes with raisins. With proper care vines in this section yield from one to two and one-half tons to the acre; thus producing from \$70 to \$200 a year. Seedless grapes are especially prolific. One farmer near here cured eleven tons from five acres and received for the raisins 5 1/2 cents. This brought him a gross receipt of \$225 for each acre, or a net return of \$200 per acre. Aside from the many tons of raisins cured, several cars of fresh grapes are shipped yearly to the canneries. The vines have a second and third crop beside the first crop from which the raisins are cured. With these two latter crops Selma supports a large distillery. Many cars of wine grapes are shipped each season to Calwa, the largest winery in the world.

The orchards in this part of California are famous for the quality and quantity of green and dried fruit which they produce. It is on this part of the country that the great canneries rely for their supply of dried fruit, and during July and August their agents may be seen loading cars with fruit every day. Being at the freight station one day last season I noticed eleven cars on the switch: five of them were for Fresno, two for Los Angeles, two for Pomona and two for San Francisco. Over 100 cars of green fruit were shipped from Selma last season. The soil, much of which is sandy, is admirably suited for peach trees. The peach is the most popular fruit tree here at present; and our home packing houses handle many thousands of dollars worth of dried peaches annually, while large quantities are purchased by outside concerns. A peach orchard from four to fifteen years old will return on an average year \$100 an acre, and cases where orchards of clings return as high as \$250 an acre are not rare. Closely akin to the peach is the nectarine. Although this is not so popular a fruit as the peach, it is cultivated with equal success. Several cars of white nectarines were shipped from here last year. About 400 tons of dried nectarines passed through Selma's packing house last year, and this fruit is being more extensively grown each year.

The apricot, our earliest fruit, although not a regular bearer, is very prolific and a crop every second year yields a good profit. Scientific nurserymen have developed varieties of this beautiful fruit that are as certain in their crops as other fruits. Almost the entire crop is dried, bringing good prices, and is very much in demand.

Pears, especially the Bartlett, cover a large acreage, commanding when green and when dried higher prices than other deciduous fruits. Small orchards of plums of various sorts flourish and net good profits

when sold to the canneries. The French prune, a late crop and a sure bearer, is grown more generally than it once was. Last fall over 1000 tons, purchased at 4 cents per pound from the farmers, were handled in the Selma packing houses.

The few fig orchards in the vicinity are becoming valuable property, now that a Fresno fig packing house sends agents over the country to buy figs on the trees. Several farmers having rows of fig trees growing along their ditch banks sell the crop for from \$50 to \$200. The land thus occupied would be of no value otherwise, and the owner incurs no expense, as the company harvests the fruit.

Although oranges flourish here up to the present time, no extensive orange orchards are planted near Selma. Many families who planted orange trees as curiosities are now supplied with the fruit for several months of each year. The lack of water has been the main drawback to the cultivation of oranges, and as we perfect our irrigation system there seems to be no reason why the sun fruit should not be profitably grown in our rich value.

THE POULTRY YARD.

A Question of Ethics and Goose Livers.

U. S. Consul Tourgee of Bordeaux, France, writes to the State Department an interesting account of the manufacture of the delicacy pates de foie gras in France. He says there has recently appeared in several American journals, from one professing to be an expert in the matter of food adulteration, a statement to the following effect:

It is something of a surprise to find that even in such a high-priced article as pates de foie gras, the traditional goose livers have been replaced by beef and pork.

The names of certain French packers are then given who are charged with substituting beef suet and pork for "diseased goose livers." One of these packers thus curiously stigmatized is a shipper through the Consulate. He is also a large importer of American products, and his trade may be seriously impaired by this denunciation of his wares.

AN ANALOGY.—It is hardly correct (at the outset) to refer to "foie gras"—as it is produced in southern France, at least—as "diseased." A fattened goose liver is no more diseased than the meat of an overfed hog. Both are "abnormal" and in that sense might be regarded as the product of unsanitary conditions. The goose may for a time be confined by a tether a yard or so in length, fastened to a stake, beside which it waits with the healthiest appetite for its frequently supplied portion of American cornmeal, which is the food chiefly relied upon for fattening. In fact, the increased importation of American maize during the past quarter of a century has been a chief stimulus to the trade in foie gras. The goose is not encouraged to take too much exercise, any more than any other fattening animal. He is not fed for his health, but to incline him to take on fat. The result of this is to greatly enlarge the liver, which is the most valuable part of the carcass. But those who have seen the prize hog almost unable to stand erect, and kept from actual melting of its superabundant flesh only by frequent use of the hose, will readily perceive that if too much fat is a disease, there are other forms of abnormal development just as objectionable as the much prized goose liver.

Foie gras d'oie—the fat goose liver—is prepared for use and export here in several forms: (a) Foie gras natural, (b) pates de foie gras, and (c) puree de foie gras. The foie gras natural is simply the cooked liver served without any form of sauce or seasoning except the fat or oil of the liver itself. The pate de foie gras of commerce consists of the cooked liver packed in tin boxes of a standard size, which the liver is roughly cut to fit. The space not occupied by the liver is filled with the trimmings of the liver or pork, finely hashed and pressed in. Over this is poured the melted fat, sometimes of the liver and sometimes beef suet. The pieces of liver clipped off in this process of fitting the cooked liver to the box are used with other hashed meats and flavoring matters like truffles in preparing what is known in commerce as "puree de foie gras."

WHY SUET IS USED.—The practice of using suet instead of the natural fat of the goose liver, as a support or matrix by which the interstices between the liver and the box are filled, is not so wholly reprehensible as might at first appear, since it has certain good reasons, or at least excuses. In the first place, the suet and the somewhat firmer meat packed about the liver prevents the latter from being broken up by sliding about the box, as it is likely to do on long journeys when only the thin oil of the liver is used. Another fact which shippers have learned by costly experience is that the pure fat of the goose is much more likely than beef suet to become rancid when used as the sole pack of the foie. It is also claimed that the strong, greenish fat of the goose is sometimes repulsive to persons of weak stomach, and that Americans who are especially opposed to what they term "messy dishes" are unreasonably opposed to pates made with the pure goose fat. The modifications described are prepared simply to reconcile

Agricultural Review.

ALAMEDA.

GRAPES SETTING WELL.—Livermore Herald: Grapes are setting well in all the local vineyards, and the yield would probably be a record-breaker but for the lack of moisture. Vineyardists fear that under the circumstances the hot weather of August will dry up the grapes. Under the most adverse circumstances, however, the crop will be better than that of last year and good prices will prevail.

BUTTE.

LAND SALES.—Colusa Sun: Mr. F. C. Lusk, selling agent of the Bidwell ranch at Chico and the Glenn ranch in Glenn county, sold of the Bidwell land ninety-nine tracts, and the average price has been about \$1800; he has sold fifty-three tracts of the Glenn ranch and the average price has been \$3,000. The average price of the Bidwell land has been just about double that of the Glenn. It will be seen therefore that the small farmers are hunting places near to a town and to a railroad. They want schools and churches without the time and trouble of building them. In selling lands for colony purposes, men had as well take this fact into consideration.

FRESNO.

VAST ALFALFA FIELDS.—M. T. Kearney, the raisin association man, who is the owner of an immense vineyard east of Fresno, is now going into alfalfa and dairying on a vast scale. He already owned 1500 acres of alfalfa land, but during the past spring he has added 2500 acres, making a total of 4000 acres. This tract will be divided into small farms, which he will lease to the persons conducting the dairies. The farms will all be enclosed by wire fencing, of which forty miles will be constructed, at a cost of \$15,000. Mr. Kearney will erect on each farm the necessary buildings for the tenants. Mr. Kearney is now in Europe endeavoring to find suitable persons for colonists to occupy his land. With characteristic enthusiasm Mr. Kearney declares that there is big money to be made in dairying on irrigated alfalfa land.

KINGS.

DESTRUCTION IN AN ALFALFA FIELD.—Hanford Sentinel: Mrs. Sullivan whose ranch is a few miles south of Armona, was a caller at the Sentinel office Monday evening, and she brought with her a sample bunch of alfalfa from her field of about sixty acres. Thirty acres of this field she had left for seed; the crop was a very promising one up to within a few days ago, the seed being most abundant and of excellent quality; but the grasshoppers went at their devilish work, and now that splendid prospect for an unusually large crop of seed is gone. The hoppers have eaten all the seed pods that were not dead ripe and have stripped the stalks of every leaf. Mrs. Sullivan has thereby lost at least \$1000, and the only thing she can now do, she says, is to rent the field to the sheep men. The hoppers have not yet reached her vineyard, and she is preparing to fight against any invasion in that quarter that may come.

KERN.

EXPERIMENTAL ORCHARD.—The Bakersfield Board of Trade proposes to set out forty acres to oranges as an experiment. The land has been purchased, a company known as the Kern Orange Farm Co. has been incorporated, and shares will be sold. If this grove is a success many others will probably be planted along the foothills of that section.

LOS ANGELES.

THE KELLER OLIVES A SUCCESS.—Pomona Times: We have been favored with a sample of Mr. Keller's olives that were packed last November. They are perfectly sound, show no signs of softening and are full of oil. They do not require coloring to sell them, for their merits make an increased market. Mr. Keller believes that an almost unlimited market may be built up at a retail price of 80 cents a gallon, at which there is for grower and seller a fair profit. His belief is based upon larger orders following a trial of them by first-class grocers. He is experimenting on olives put up two years ago, and with present prospects of success. Mr. Keller says the successful curing of olives is a matter of experience. An exact formula can not be laid down that will be successful every year, or even in all cases the same year, but he thinks all who go into the business with a determination to succeed may do so.

NEW PARASITE FOR BLACK SCALE.—Record: Prof. Alexander Crow, State Horticultural Quarantine Officer, believes he has a few bugs which are worth hundreds of thousands of dollars to Los Angeles county and other parts of southern California. These bugs are a black scale

parasite with the scientific name of *Scutellista cyanea*. These bugs were brought from South Africa, where they rid the orchards of black scale. A colony of these parasites has been sent by Mr. Crow to W. E. Hughes, chairman of the Central Olive Growers' Association, who has a big olive ranch near this city, and he has already set the bugs to work on his trees, and is confident of good results. The parasite in its mature form is a tiny black fly. It gets in its fine work on the scale by laying its eggs under the shell of the scale, and the egg of the fly hatches out at about the same time the scale eggs do. The little grub then proceeds to devour the young scale and to eat all the scales in sight. Then it becomes a fly. Such effective work has been done by this bug in South Africa that the State horticultural authorities are hoping it will be equally effective in southern California.

NAPA.

MONEY IN COWS.—St. Helena Star: H. L. Connor is much pleased with his success in the dairy business. Some time ago he purchased a separator and since then has been doing his own separating. He finds this very advantageous, as the milk can be fed to calves and hogs while it retains many of its nutritive qualities. At present Mr. Connor is milking seven cows. From these he is averaging \$7.75 every month for each cow. He does all his own work, raises calves and hogs, gets his money every month, and says that the business is highly satisfactory in every respect.

PLACER.

NIPPED HIS NOSE.—Placer Herald: One day last week, while George Page of Long Valley was engaged in removing honey from a hive, he accidentally slashed his nose with a butcher knife he was using. The bees were coming too close for comfort, and, as George struck blindly at them, the knife descended on his ornamental protuberance, almost severing it from his face. The doctor's skill will probably restore the nose to its former usefulness and beauty.

SAN BERNARDINO.

TURNING DESERT LAND INTO VINEYARD.—Sun: The Kenwood Commercial Co., incorporated in February last for the purpose of reclaiming and improving a large acreage in the Muscupiabe rancho, near the mouth of Cajon pass, has already expended something over \$20,000. The 1750 acres of land that the company secured control of had always been considered as practically desert, and, though many realized that the soil was fertile and tillable and could be easily cultivated if water was secured, no attempt was ever made to improve it until the Kenwood Commercial Co. secured control. Preparations are being made to install a complete water system, the cost of which is estimated at between \$5000 and \$6000. Among the improvements that the company have made is the erection of a nine-room dwelling house and a large stable and the cultivating and setting to grape vines of 175 acres of land. Twelve men are at work on the property, and before next season 400 additional acres will be planted to vines. The work is being done under the personal supervision of County Surveyor M. L. Cook, who is a stockholder in the company. The acreage that is not serviceable for vineyards will be used as grazing and pasture lands. Back of the company are John A. Devore, Otis Jones and W. S. Williams, wealthy residents of Chicago.

SWINDLED BY LAND SHARKS.—Weighing less than sixty pounds, after a period of confinement in the Highlands Asylum, and later in the insane ward of a San Bernardino hospital, Mrs. E. Troutline of North Cucamonga died because she refused to eat food of any sort. Her mind became unbalanced, it is said, owing to the misfortunes which she and her husband had suffered on their ranch near Cucamonga. The family came to California from Chicago, lured by advertisements of cheap land. Upon their arrival they found that the land they had purchased was chiefly a barren, sandy waste, and the consequent disappointment and privation broke down the woman's health and reason. Her daughter also lost her mind, and the added worry placed the mother beyond hope of recovery. She was a native of Germany, fifty-six years of age.

SAN JOAQUIN.

LARGE BEAN AND CORN CROP IN THE TULE.—Lodi Sentinel: The bean and corn crop in the tules is much larger this year than that of previous years. The entire crops are a little late, but the mild weather has benefited them to a great extent. The beans will yield about thirty-five sacks to the acre and sell at \$2.40 a sack.

PROFITABLE CHERRY ORCHARD.—Stockton Independent: Mrs. M. A. Po-

desta owns five acres of cherry orchard a short distance from Stockton. The five acres have yielded 3000 boxes of cherries, which have been sold at an average of 85 cents per box. This gives a gross revenue of \$2550 from the five acres. The cost of picking, packing and marketing is estimated at 2 cents a pound, or 20 cents a box. The net returns from the orchard were therefore \$1950, or \$390 an acre. One cherry tree yielded 150 boxes of cherries, which sold for \$125. The cherries were all marketed in Los Angeles.

MANY DRYING YARDS TO BE OPERATED.—The orchardists say that the canneries are not buying many apricots and most of the growers are either making arrangements to dry their fruit or sell it to shippers, as they do not care to dispose of only a portion of the crop to the cannery and allow the agents to pick the fruit. The local manager of the cannery says that there is so much of the fruit left over from last season that the Association will only make a short run on the best fruit to be secured. The growers also complain that prices are being kept down as low as possible. Several drying yards have already been opened and it is expected that this season the quantity of dried apricots will be larger than in many years.

SANTA CLARA.

THE PRUNE CROP.—San Jose Mercury: Prof. C. W. Childs, who is a member of the Santa Clara County Farmers' Club, says: "The crop of prunes will not be so large in the valley as has been anticipated. There is now a heavy drop taking place, especially on the east side. The Santa Clara County Fruit Exchange has carefully collected data and places the crop of the county this season at not over 70,000,000 pounds. Growers should not destroy the future market by contracting their fruit at a low price."

AN ORCHARD BARGAIN.—Campbell Visitor: Mr. J. D. Sawyer has sold his Central avenue residence to Mr. Canwright and has bought the Duncan orchard farm on Williams road—ten acres—paying \$5000 for it. It is considered one of the best real estate bargains of the season. Mr. Sawyer got a full crop on the trees of forty to fifty tons of prunes, and all the farming machinery. There is a fine eight-room residence on the place.

BEE CULTURISTS ORGANIZE.—Mercury: The people of the county who are interested in bee culture met at Hale's Hall Saturday for the purpose of forming an association. There was a large attendance and much interest was manifested in the proceedings. G. W. Williams presided and Miss G. Bradshaw acted as secretary pro tem. There was a general discussion of the subject of bee culture and the needs of the industry in this county. A permanent organization was effected under the name of the Santa Clara County Bee Keepers' Association. J. L. Bowers was elected president, Mrs. G. M. Snyder vice-president and B. B. Bradshaw secretary. The association adjourned to meet again during the first week in November at the residence of J. L. Powers at Coyote.

SACRAMENTO.

SAYS HOPPERS DEVoured CHILDREN'S CLOTHING.—Bee: Frank Lucas, the veteran passenger conductor on the Placerville railroad, says that while stopping a short time at White Rock the railroad section foreman told him that grasshoppers had invaded his house at that place and had actually eaten up the clothing of his children.

EVERYTHING GREEN DISAPPEARED.—Ex-Assemblyman John Butler, of White Rock, whose farm is on the El Dorado county line, stated in an interview that grasshoppers had eaten everything green in the community. They had stripped orchards and vineyards and mowed down vegetable gardens. "At my place they stripped the leaves off the fruit and shade trees and the grape vines and then ate up all the vegetables. We did not have a large crop of fruits, grapes or vegetables, but the hoppers got all we had." Mr. Butler said the hoppers were traveling in a westerly direction, and that many of large ones were dying.

SHASTA.

FRUIT GROWERS MEET.—Anderson News: The Shasta County Fruit Growers' Association held a meeting last week and elected the following officers: J. D. Dozier, president; S. C. Dick, vice-president; G. Edwards, secretary; G. A. Lami-man, treasurer. The cannery and drying yard question was discussed and it was decided to induce capital to take hold of the matter at once. A conservative estimate of the crop in this district states the yield to be between 8000 and 10,000 tons of green fruit, most of which will have to be cured, requiring an immense amount of labor before the fall rains set in.

MONEY IN CATTLE.—Cottonwood Enterprise: Last week N. Gould, Frank Adams, A. White, E. B. McClaskey, J. Lynch and others drove their beef into town, which were bought by Dock Martin, who buys for a firm in San Francisco. The price paid was 7½ cents per pound. The cattle averaged in weight 575 pounds. The abundance of feed in the mountain ranges makes the expense of raising cattle comparatively nothing. There is no better investment a man can make than by buying a few head of cattle and attending strictly to business.

SONOMA.

HOP CONTRACTS.—Santa Rosa Press-Democrat: In the hall of records several hop contracts were filed last week, in which local growers contract their crops at prices ranging from 12½c. to 15c. H. Brittain agrees to sell to C. Green Son & Brainard 12,000 pounds of hops at 12½c. per pound of the crop of 1902, 1903 and 1904. W. H. Callahan and L. Brittain contract to sell G. A. LaVie 12,000 to 15,000 pounds of hops at 15c. per pound, and B. F. Waymire agrees to sell G. A. LaVie 14 000 to 24,000 pounds of hops at same figure.

SOME FINE LOGANBERRIES.—T. E. Barlow of Green valley is growing some splendid Loganberries at his ranch, where he has thirteen acres planted to this fruit. Some sixty boys and girls are hired as pickers. The average crop per acre is one and a half tons and Mr. Barlow realizes \$100 per acre.

SUTTER.

SALE OF THE BRAY FARM.—Sutter County Independent: The Bray Bros' farm, near Nicolaus, has been sold for \$32,000. The sale includes 1000 acres owned by George W. and Frank A. Bray, and 140 owned by John Burns and L. Striplin, making 1140 acres, which is sold to A. H. Vernon, H. and Anson Gilmore, recently of Minnesota, now of Santa Clara county. They do not come in possession of the property until Sept. 1st and not until the crop is harvested. This is a fine body of land. It is said that it will be divided up into smaller farms.

WHEAT A LITTLE SHORT.—Sutter Independent: A number of farmers have begun to cut wheat in this county and report that the wheat is not turning out as well as expected. They have an abundance of straw, but the heads are light. Some of the fields that were expected to go twelve and fourteen sacks are averaging about ten sacks. The cause for this shrinkage is attributed to a north wind which occurred about the time the grain was in blossom. Rust is also one of the causes of the shortage.

TEHAMA.

APPLES OLD AND NEW.—Corning New Era: E. E. Cole has still on hand some of last year's crop and some Red Junes raised this year. Last year's apples are in good condition and a complete "knock-out" to those who claim that the fruit cannot be kept here between the two seasons.

GOOD PRICES FOR CATTLE.—Red Bluff News: Ed Saunders drove to town last Tuesday 318 head of cattle, belonging to Ellison & Saunders, which he sold to Doc Evans. The cattle were weighed and brought \$9640, being a little over \$30 per head.

TALL WHEAT GROWN AT MANTON.—Thomas Toleman says he has wheat growing on his ranch near Manton that stands 7 feet in height and that it bears well-filled heads that are fully 4 inches in length. Manton has been celebrated for years for its fine apples but it was not generally known that the soil is so well suited to wheat growing.

TULARE.

MULES AS MONEY.—Register: P. E. Donnell is buying up yearling mules in this neighborhood for shipment to the Eastern market. Most of the full grown mules that could be bought up have been shipped out of the county, and now the buyers are after the youngsters. A bunch of twenty yearling mules were sold to Mr. Donnell for \$40 each.

Ratio of Sheep to Cattle.

TO THE EDITOR:—Will you kindly inform us if there are any Government statistics, showing in pasturage or feeding of sheep, how many sheep are equal to a cow; and also what the custom in California is as to the ratio between the two classes of animals when renting pasturage?—READER, Sacramento county.

We have not the facts desired. Will readers give us their practices in such reckoning? It will probably be instructive to many.

THE HOME CIRCLE.

The Daffodils.

I wandered lonely as a cloud
That floats on high o'er vale and hills,
When all at once I saw a crowd,
A host of golden daffodils,
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the milky way,
They stretched in never-ending line
Along the margin of the bay;
Ten thousand saw I at a glance
Tossing their heads in sprightly dance.

The waves beside them danced, but they
Outdied their sparkling waves in glee;—
A poet could not but be gay
In such a jocund company;
I gazed and gazed, but little thought
What wealth the show to me had brought.

For oft when on my couch I lie
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude,
And then my heart with pleasure fills
And dances with the daffodils.

—William Wordsworth.

Days Gone By.

O the days gone by! O the days gone by!
The apple in the orchard and the path-
way through the rye;
The chirrup of the robin and the whistle
of the quail,
As he piped across the meadows sweet as
any nightingale;
When the bloom was on the clover and
the blue was in the sky,
And my happy heart hrimmed over in
the days gone by.

In the days gone by, when my naked feet
were tripped
By the honeysuckle's tangles, where the
water lilies dipped,
And the ripple of the river lipped the
moss along the brink,
Where the placid-eyed and lazy-footed
cattle came to drink,
And the tilting snipe stood fearless on the
truant's wayward cry,
And the splashing of the swimmer in the
days gone by.

O the days gone by! O the days gone by!
The music of the laughing lip, the luster
of the eye;
The childish faith in fairies and Aladdin's
magic ring,
The simple, soul-reposing, glad belief in
everything,
When life was like a story, holding
neither sob nor sigh,
In the olden, golden glory of the days
gone by.

—James Whitcomb Riley.

Love on Ice.

One winter afternoon after Dr. Arnold Scherner had come home from his desk in the Bureau of Finance, eaten his dinner, and stretched himself on the sofa to enjoy a cigar and a French novel, his young brother Hans burst into the room and said:

"Alma Holdesheim asked me to return this book with Adrienne's thanks."

"Why didn't you give it to me at once?"

"What was the hurry?"

"That's my affair. Now get out!"

Hans "got out" and banged the door. Arnold opened the book at page ten and copied on a piece of paper certain letters which he found marked by almost imperceptible pencil dots. The transcription read:

"I must see you to-morrow. Meet me at Haller's at four."

The Scherners were a family of officials. The father was a bureau chief, the oldest son, Gustav, a provincial governor in Dalmatia; Arnold was in the Ministry of Finance, and Hans was preparing for a government position. The only daughter had married an official.

Arnold was very ambitious. Social rank and consideration he had, what he wanted was money. It had never been too abundant with the Scherners, and Arnold fully realized its power. Hence he had resolved to marry it. As his friend Rudolf used to say, "It is possible to love a girl even if she is rich."

He had the entree to the best families in Vienna, but if he should go to a

rich man and demand his daughter's hand, it would be doubtful whether his own prospects of official advancement would counterbalance the lack of present fortune. Clearly, then, the thing to do was to capture the heart of a rich girl, preferable a very young one, and so enlist the aid of love in overcoming parental opposition.

His first budding sweetheart was carried off by a predestined cousin, the second was dazzled by a lieutenant's epaulets. Then, on the ice—every body skates in Vienna—he met Alma Holdesheim, and on his first visit to her house he met her sixteen-year-old sister, Adrienne, and marked her for his own. Pretty, modest, well-bred and, most important of all, unsophisticated, and not yet "out," she seemed the very girl for his own. In the Vienna equivalent of Bradstreet, old Holdesheim was thus labelled:

"Owns a large spinning mill, an estate in Bohemia and a town house in Vienna. Estimated to be worth 600,000 gulden; income, 18,000."

This was satisfactory. There were three children, and Adrienne's dowry could be reckoned at 150,000 gulden. Arnold's wooing began on the ice. Hitherto Adrienne had skated only with girl friends, and a few of their young—very young—brothers, who didn't count.

Dr. Scherner was the first real man who had paid her any attention. He handled her skillfully. As long as they were alone he treated her in a familiar, comrade-like manner, but in the presence of others he showed her the elaborate politeness due to a grown up young lady, and both of these things pleased her.

And as he was handsome, witty and well-bred, it was no wonder that "little Adrienne" fell in love with him. During the summer his memory was kept green by 178 souvenir post-cards which he sent her.

In the following winter she made her debut and Arnold met her everywhere. He made himself her shadow so that she once natively said: "If I go anywhere and you are not there I miss you so!"

Adrienne's mother, not being blind, could not fail to notice Dr. Scherner's attentions, and their favorable reception by Adrienne.

"Pshaw! She is only a child," old Holdesheim replied to his wife's warning. "What if people do talk about it? Scherner is an honorable young fellow, and his father will be in the ministry some day."

The ensuing summer strengthened the bond between the lovers. Arnold had induced his father to spend the vacation in the vicinity of the Holdesheims. The young man might have done so alone, but he was unwilling to attract the attention of Adrienne's parents too strongly until he had made sure of her love.

This certainly came in the course of the summer, and the first vows of love were exchanged. "The third day comes a frost, a killing frost," and the third winter Adrienne caught cold and was not allowed to skate or dance. The lovers met rarely, and hence the device of borrowed books and marked letters.

But this was not the first frost. Early in the season Adrienne had discovered that Dr. Scherner was not the only young man who cared for her society, and social success made her coquettish. She meant no harm. "Arnold," she thought, "ought to recognize cheerfully her right to hold a little court, like other girls." But Arnold did nothing of the sort, but made the mistake by yielding to jealousy.

Resolved to nip the growing evil in the bud, he scolded her, and thereby made matters worse.

Adrienne was offended that he could think of her as a flirt, and waited for him to make overtures toward reconciliation. But he obstinately maintained the role of the offended party, and was very cold and distant.

"Firmness is necessary with a woman," he said to himself. "When she sees that she can play with you, your influence over her is gone for ever."

Meanwhile, something that Adrienne would never had discovered had be-

come very evident to her mother—namely, that Arnold Scherner was simply in quest of the well-dowered bride. She knew that the Scherners were comparatively poor, and was not in favor of an alliance with them. But she was too wise to warn Adrienne directly. Instead, she undertook her financial education, initiating her into all the details of the family resources and expenditures. Adrienne learned to her astonishment that her own fortune would amount to 150,000 gulden.

This seemed like an immense sum, but it dwindled marvelously when she learned that it represented an annual income of only 6000 gulden, about a third of what she would require in order to live in the style to which she had been accustomed.

Clearly, then, her husband must have an income of at least 12,000 gulden. Then Mamma Holdesheim one day capped her argument by remarking innocently that Dr. Scherner's salary of 3000 gulden was a very high one for so young a man. Here was a sad discrepancy. "I shall have to economize," thought Adrienne.

At another time her mother said: "Arnold must marry a rich girl. I wonder that he has not asked for your hand, as you and he seem to like each other. With your money he could do something for his family."

Adrienne had expected opposition, but she was not prepared for bold mathematical demonstration.

Shortly before this, Alfred Mortell, the son of a rich brewer, had come upon the scene. His reception had not been encouraging, for the little rift within the lute had not yet appeared.

Now Mortell was accustomed to receiving an unpleasant amount of attention and flattery from young ladies and their mammas, and he said to himself:

"Thank heaven! Here is one girl who does not care if I am rich and unmarried."

This feeling inspired the hope of winning Adrienne by his personal merits, and he began to court her assiduously.

She was barely civil to him, but Arnold's jealousy was aroused, as has been said. After the lover's quarrel, Adrienne devoted more attention to Mortell, partly to punish Arnold, partly because she was not entirely free from vanity, and knew how many girls were envying her the conquest of the young millionaire.

Then came the suspicion that Arnold was in love with her money, and then came a ball at Mortell's luxurious house.

Last of all came her father with the news that Alfred Mortell had asked for her hand.

She begged for a week of deliberation, though her mind was made up. She wanted the week in order to be off with the old love decently and in order. The rupture, she was determined, should be made by Arnold, not by herself. She wished to appear well in the world's eyes and his, for, after all, she loved him in a way, and was grateful to him for the little romance he had given her. Hence, the rendezvous at Haller's. Then, after the waitress had brought the perfumery ices and retired, Adrienne said:

"I have news for you. You must promise to listen calmly until the end. Then you will understand and perhaps pity me."

Arnold obeyed, and she continued.

"At one time, you know, we were wealthy. Until a little while ago I supposed that we were still wealthy. I knew, indeed, that papa within the last year has had to pay large sums on my brother's account; but still I could not understand why, when we were alone together, he always seemed so anxious and troubled. But the other day he told me that my brother had squandered enormous sums, and not daring to confess to papa, had tried to cover his losses by speculating in stocks, the result of which was that he lost a good deal more. In fact, as he had power to sign for the firm, he has gambled away not only all his own fortune, but most of papa's and ours."

"Papa has succeeded in obtaining a delay in the payment of the largest debts, he says."

"When papa told me this, I tried to console him by saying that I, for one, did not care so much about money. Then he told me the whole truth. The debts amount to more than we can pay. Unless we receive assistance from some source, the firm will go into bankruptcy."

Adrienne paused, but Arnold said not a word. She had glanced at him once or twice to discover the effect of her communication, but she did not dare to look at him squarely for fear he would read the lie in her eyes.

"Such being the state of affairs," she continued, "I resolved, after thinking and worrying over it a good deal to ask you to give me up. I cannot consent to chain your fate to mine, and, besides, I feel compelled to sacrifice my love for you to my love for my father."

"The shame of bankruptcy would kill him—I must save him from it. You know how."

"Beer?" said Arnold. He was surprised, but never dreamed of questioning the truth of her statement.

Adrienne shrugged her shoulders. "Beer, or banking or railways. What is the difference? I am in the market for the highest bidder."

"But—hm! But cannot I, perhaps, assist your father? It is true that I have nothing but my salary. Is the sum—I mean the sum necessary at once—so very large?"

"A good many thousands."

There was a long pause.

"I cannot give you up," Arnold said at last.

"But you must; I cannot let you sacrifice yourself."

"But I love you, Adrienne!"

"As I do you, Arnold. But we must—"

Another long silence. Then Adrienne said:

"I must go now. I will give you until Sunday to decide. If you love me truly you will give me up and not tempt me from my duty. Do not make my heart heavier than it is!"

"If I receive a picture post-card from you on Sunday, I shall know that you agree with me. Good-by."

She sprang up and was gone before he could make any effort to detain her. Arnold sat looking at the untasted and melted ices.

"Two years wasted!" he muttered.

"And I believe I am really in love with the little thing. Confound it! But a bankrupt father-in-law? Never! After all, it might have been worse. Suppose it had come after our formal betrothal!"—N. Y. Evening Post.

Presence of Mind.

A writer for one of the Chicago papers has accumulated quite a store of anecdotes showing the extraordinary presence of mind displayed by people in critical situations. One of his best stories concerns a certain Harry Brown of Philadelphia, whose presence of mind served him well in the face of almost certain death. He was working on the top of a huge steel smokestack while it was being hoisted into place. The tackle broke and Brown, perceiving that the stack was about to fall, dived inside. It dropped with a tremendous clatter and bounded from one steel beam to another until it struck the ground 50 feet below, with Brown still inside. His companions hurried to the spot, expecting to find him crushed to death. When they looked into the stack he was slowly crawling out. He said he didn't think he was much hurt, but an ambulance surgeon found the right leg broken and one shoulder bruised.

DOCTOR: I am slightly in doubt as to whether yours is a constitutional disease or not. Patient: For heaven's sake, doctor, have I got to go to the expense of appealing to the United States Supreme Court to find out whether it is or not.

JENKS:—"Haven't you and that neighboring farmer settled your differences yet?" Farmer Akers:—"No, but our lawyers have settled. Jenks:—"Settled? How?" Farmer Akers:—"On our farms."

Food for Warm Weather.

Regarding the plan of dietetics now being followed at Wilder Hall, the new Wellesley dormitory, Miss Ollie Davis, who is at the head of this modern college, as well as lecturer on domestic science, says: I certainly advocate a change in the dietary for spring and summer. A scientific apprehension of the function of food and a working knowledge of the value and part which the different foodstuffs hold in the human economy could warrant no other opinion. Following a scientific dietary cannot but mean better health. The fact of its being scientific indicates that it corresponds to the needs of the body. It is also a recognition of what is involved in asking the body to overwork.

What changes would I advocate? It is my opinion that less meat is an absolute demand of good health. But less meat does not mean no meat. Ordinarily the lighter meats—white meats, fish and eggs—are preferable to beef and other heavy meats. These lighter meats supply all the requisites of the body, and are not so stimulating, nor do they carry with them many of the evil effects of too much beef. By all means, now, substitute fish and eggs for beefsteak at breakfast, and increase the use of vegetables. These, if properly cooked, will furnish all the mental and muscular energy needed. The energy required in the winter for the production of heat can now be directed toward muscular and mental work. Moreover, during these spring days the college students are out of doors a good deal. They are getting their exercise and fresh air with less muscular expenditure—all of which goes to show that a less quantity of food is needed for the support of mental energy than in the winter months.

Salads are a pleasing addition to the dietary. Fruit, vegetable and nut salads are hygienic and popular. Fruit should be regarded as a necessary rather than as a luxury. From the standpoint of human economy it is always cheap to have fruit for breakfast, and during the warm spring and summer days it is wise to use it as a relish for luncheons and for dinner to replace the puddings and heavy desserts of winter. Ice cream, if properly made and frozen, is a wholesome, nutritive dish, both appetizing and economical. If properly—that is—slowly eaten it will not lower the temperature to such a degree as to be unhygienic.

As to the effect of such a diet upon health: Less meat in itself means a clearer head. Less meat, more vegetables and fruit, no pastry, mean freedom from spring fever and from generally heavy feelings. If the health is not good, do not attribute it to too little meat and too much fruit, salad and vegetables.

In regard to the comparative expense of such a dietary, the value of it lies in the conserving of human energy rather than in the saving of hard cash. In point of fact it will not be found more expensive. Oil and fruit in large quantities usually offset the reduction in meats. But at this particular time, since meats are so expensive, the dietary I am advocating is naturally cheaper. Science is back of the spring and summer dietary. Nature supplies the needs of the flagging appetites in the springtime.—New York Tribune.

Lightening Tedious Tasks.

I heard a woman say the other evening: "When I get rich there is one thing I will not do. I will wash and do any kind of housework, but I will not mend stockings." I watched the process for some time, and came to the conclusion that it is not exactly calculated to make a person happy to sit for an hour or two steadily tucking the thread of yarn in and out over a vacant space in a stocking. It must become decidedly monotonous after one has had the fortune to go the rounds of a family of five or six.

"But the stockings must be mended." So it would seem. Of all our wearing apparel, stockings seem to be fated to swiftest destruction. This is especially true of those worn by boys and girls—

and men folks, too—on the farm; so many steps to be taken every day, and so much climbing of trees and running about among the briars, bushes and thorns on the part of the young folks. What wonder that it comes to be quite a tax upon the caretaker of the family to keep all the stockings in repair.

What can be done to lighten the burden? Well, one good woman I know of has invented the plan of taking the stockings of her son as soon as they are purchased or knit and reinforcing them by strong pieces of cloth—say of bed ticking—sewed on the heels, where the wear is most severe and holes are sure to come first. This prolongs the life of the stocking a long time and greatly lessens the labor of the mother. Some manufacturers do something along this line by making the heel of double thickness. This is a help. Still another firm makes a business of manufacturing and furnishing for tired mothers the feet of stockings in different sizes, to be sewed into the legs of the hose of the little ones, which might otherwise need to be discarded. Here is a field which might be worked far more successfully than it now is.

After use of as many devices as possible, there still must be more or less of this work, calling for the exercise of patience and skill on the part of some one. It seems to me—perhaps because I am a man and know little about the matter from practical experience—that if this task could be taken up earlier in the day, when one was not weary from doing other kinds of work, it might not be quite so distasteful. I have never thought it just the thing, anyway, for the wife and mother to be compelled to spend her evenings this way. Her husband usually rests, and reads and sleeps in his chair. Why not the tired wife? Or, if she must mend the stockings then, might not the husband make the time a little brighter by reading aloud or otherwise beguiling the hour? I know she would thank him for this little service, and be helped by it in more ways than one.—New York Tribune.

Mode of Dress in India.

An English physician who is visiting India ascribes the soft skin, strong and supple waists and perfect carriage of the women of India to their mode of dress; but, while decrying the unhygienic costuming of Western civilization, does not advocate the adoption of the Eastern fashion. He says: The garments worn by the women of India are without exception loose and of light weight. The working women wear three. First, the thin red and black petticoat, which hangs in loose folds from the waist to the knees, and which weighs only a few ounces; second, the breast garment, which is like a little bodice put on from the front and fastened by a string behind. A tape at the bottom goes round the waist, and at the top are short sleeves which keep it in position. It does not reach far round behind, and is therefore something like a zouave jacket put on behind before! The third garment is a large cotton shawl (called a sari), usually red in color, with or without black or blue or yellow flowering in it. The woman usually wears this long shawl over her head, and has it hanging loosely down over her shoulders and round her body. If she meets a stranger she can draw one side of it over her face. If she wants to work she can throw it away from one arm or the other, or, if need be, she can throw it off entirely.

The doctor concludes: The lessons that I shall go on teaching when I return to England, fortified by my experience here, are the same lessons that I have found so valuable in the past, viz.: lightness of clothing (coupled with warmth), porosity of clothing, more suspension from the shoulder and less from the waist, and absolute freedom of waist movement, coupled with suitable waist muscle exercise. If only we can replace the wasp waist by a reversion toward the Venus type, we shall have done much for born and unborn generations.

For years I have been preaching to

my tightly swathed sisters of the West that chest and abdomen alike need room for the regular expansion of respiration. For years I have found that the original seat of many a trouble lay in the corset, and the multitude and weight of clothes hanging from the waist, and for years I have been trying to harmonize feminine needs with feminine health. Here in India I see an answer to some of the problems that have bothered me.

In England the young women, eating five times as much meat as their grandmothers ate, are pallid with anæmia and languid with nervous debility. Here the same young women, eating no meat at all, know nothing of anæmia and less of nervous debility.—N. Y. Tribune.

Impacted Ear Wax.

The normal secretion of the orifice of the ear is the product of glands situated in the outer half of the canal only. This secretion—the cerumen or ear wax—is slowly poured from the gland ducts as a thin, yellowish liquid. As it quickly loses a large amount of its watery element by evaporation and becomes admixed with dust, it forms a thin layer, wax-like in color and consistency, which normally covers only the outer portion of the canal—that in which the glands are located.

This layer of material probably has its chief function in common with the few small hairs in the same location in protecting the vibratory membrane—the drum—from the contact of dust.

It is interesting to observe that the exit of this layer of wax is accomplished by nature chiefly with the aid of the motion communicated to the ear canal by the movements of the jaw in chewing and talking, a motion readily felt by touching the orifice with the finger tip during these processes. The constant increase of the secretion is, therefore, provided with a corresponding loss, which takes place almost as imperceptibly as the constant loss of the superficial layer of the skin from the surface of the body.

This explanation serves to make clear why the use of ear spoons, pins or hairpins is unnecessary. The use of such objects is not only superfluous, but is often the cause of the very condition which those who use them would prevent.

Even too vigorous washing with a twisted cloth or sponge, for example, may result in pushing the wax back into the canal until a mass sufficient to block the entire opening is accumulated.

The first intimation of the presence of impacted wax is often the sudden occurrence of a considerable degree of deafness. This is most likely to happen on a damp day or just after or during a bath. A slight amount of moisture causes the mass to swell so that the narrow chink previously existing between the mass and the canal is closed. If it is not now removed, the mass may shrink and the hearing power be temporarily restored, only to be lost again when conditions arise causing an increase in the size of the mass.

Firm, gentle syringing with warm water from a piston ear syringe is usually regarded as the safest and best method of removing the mass, the handling of which had better be entrusted to a physician or trained nurse, if possible.—Youth's Companion.

ELDERLY SPINSTER—"Ah, dear, Julia, you can't imagine how I dread to think of my fortieth birthday!" Julia—"Why, dear?" Did something very unpleasant happen then?"

"THEY asked me to their reception," said the girl with the two-story pompadour, "but it wasn't because they like me; it's because I can sing."

"Oh, I'm sure you're mistaken," said the other girl, impulsively.

MOTHER—"There were two apples in the cupboard, Tommy, and now there is only one. How's that?"

Tommy (who sees no way of escape)—"Well, ma, it was so dark in there I didn't see the other."

DOMESTIC ECONOMY.

Domestic Hints.

SCRAMBLED EGGS.—Beat eggs light, add a pinch of salt, and turn into a hot buttered pan. Stir constantly until all is thickened and curdled. Serve as soon as possible.

STEWED LOBSTER.—Cut the boiled lobster fine; put it in a stewpan with a little milk or cream. Boil up once; add one tablespoonful of butter, a little pepper, and serve plain or on toasted crackers. Cook the lobster just long enough to heat it, as cooking it longer renders it tough.

BUTTERMILK GRIDDLE CAKES.—Beat one egg, add one pint of buttermilk and one-half teaspoonful of salt, dissolve one level teaspoonful of soda in a very little boiling water; put three cupfuls of flour in a bowl and pour the liquid over it, beating the mass thoroughly; have the griddle hot and bake in thin cakes.

CREAMED CHICKEN.—One chicken, one pint milk, two tablespoonfuls cornstarch, one-half teaspoonful salt (scant), butter size of an egg, one egg. Remove all the bones and pick the meat fine. Bring the milk, salt and butter to a boil, and thicken with the cornstarch dissolved in a little cold milk or water. Add the chicken and boil a minute, stirring constantly. Just before serving drop in the egg and whip quickly to prevent curdling. Serve on buttered toast. Either fresh or canned chicken may be used.

CREAM OF SUMMER SQUASH.—Peel the squash, slice thin, put in a saucepan and add boiling water to come nearly to the top of the squash. When nearly tender add an onion, a bay leaf and several sprigs of parsley. When tender mash through a fine sieve, return to the fire, let it come to a boil, stir in a heaping tablespoonful of butter, a heaping tablespoonful of flour, season with salt and pepper and a tiny pinch of mace. Have almost as much boiling milk as puree, remove from the fire and stir together, add two tablespoonfuls of cream and serve at once.

Hints to Housekeepers.

The majority of housewives soak their dried fruits too little and cook them too much. Prunes, apricots, etc., are far more delicious if they are allowed to remain in cold water until they have gained their original plumpness, and are then brought to a simmer in the liquid in which they are soaked. They will need only fifteen or twenty minutes of cooking.

The Oriental custom of serving between courses iced water containing dried fruits could be adopted to advantage here. Prunes, apricots, figs and raisins are soaked together until all the moisture lost in desiccation has been restored. Then the liquid is iced. It makes a refreshing dish on a hot day. To lend richness to the water lemon juice and sugar may be added.

A simple, wholesome drink that can be given children can be made with good currant jelly as the main flavoring. For the foundation boil two pounds of sugar and a quart of water together for five minutes. Skim thoroughly, then add the juice of two lemons and one large orange. Strain carefully, and finally stir in a full pint of the best currant jelly. Continue stirring until the jelly is entirely dissolved, then place on ice until very cold.

Dainty little odds and ends that will prove useful to the traveler are numerous. One such article is a flat and neatly tied square of linen, which, when opened up, shows a sachet closely covered with pins of many sizes and colors. Another is a small box covered with linen, on which is a water-color design. Through a button-hole slit in the cover an end of narrow ribbon protrudes. A silver bodkin which is slipped in at the side gives the complete paraphernalia for running ribbons into underclothing. Both these trifles are necessary for the person who stays at home as for the one who travels, but they are dubbed travelers' comforts.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, July 9, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	75 1/4 @ 73 1/4	76 @ 74 1/4
Thursday.....	73 1/4 @ 73 1/4	74 1/4 @ 73 1/4
Friday.....	* @ —	@ —
Saturday.....	* @ —	@ —
Monday.....	72 1/4 @ 74	73 1/4 @ 74 1/4
Tuesday.....	73 1/4 @ 72 1/4	74 1/4 @ 73 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	36 1/4 @ 35	36 1/4 @ 35
Thursday.....	34 1/4 @ 34	34 1/4 @ 34
Friday.....	* @ —	@ —
Saturday.....	* @ —	@ —
Monday.....	33 1/4 @ 34 1/4	33 1/4 @ 34 1/4
Tuesday.....	34 @ 33 1/4	33 1/4 @ 33 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	@ —	@ —
Friday.....	* @ —	@ —
Saturday.....	* @ —	@ —
Monday.....	1 14 @ 1 15	1 18 @ 1 19
Tuesday.....	1 15 @ 1 15 1/2	@ —
Wednesday.....	1 15 1/4 @ 1 16	1 18 @ —

* Holiday.

WHEAT.

The local market for wheat has not been noteworthy for activity since last review, but it has presented in the main a firm tone. That business was not brisk was more due to limited offerings than to lack of inquiry or indifference on the part of buyers. Shippers and speculative operators are doing more purchasing in the interior than in this center, and in some if not most instances are paying relatively better figures in the country than they are publicly bidding or quoting here. The prospects are much better than they were a year ago for wheat being in good request for shipment, and present indications are decidedly favorable for better average prices being realized than during the season just closed. The crop in the great wheat belt tributary to Chicago is likely to prove considerably below the average, and indications are that there will be considerable demand for American wheat from continental Europe, more particularly France. It is a matter of record that only when there is other than British demand for our surplus wheat does the market develop much firmness. Ships are in fair supply, but are being rather firmly held. The last spot charter reported was at 26 shillings 6 pence per long ton for the usual European voyage. Exporters here are endeavoring to introduce a new charter, compelling owners to pay 60c per ton for ballast required in going to Port Costa, and to allow charterers to engage their own stevedores. Under the old form, the charterer furnished ballast at a cost of 60c per ton transportation, and it is claimed that many captains insisted on more ballast than was really necessary, being particular to have rather too much than too little, as it did not cost the ship anything. The ship owners have been engaging the stevedores and have been getting a rebate from the full rates charged.

California Milling..... 1 17 1/2 @ 1 20
Cal. No. 1 shipping, alongside..... 1 13 1/2 @ 1 15
Oregon Valley..... @ —
Washington Blue Stem..... @ —
Washington Club..... @ —
Off qualities wheat..... 1 10 @ 1 12 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1900-01.	1901-02.
Liv. quotations.....	58d @ 59 1/2 d	—s-d @ —s-d
Freight rates.....	36 1/4 @ 38	25 @ 26 1/4 s
Local market.....	95 @ 97 1/4	1 15 @ 1 16 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.14 @ 1.16.
May, 1903, delivery, \$1.18 @ —.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.15 @ 1.16; May, 1903, \$1.18 @ —.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on June 1st and July 1st:

Tons—	June 1st.	July 1st.
Wheat.....	50,062	*37,861
Barley.....	9,177	*10,966
Oats.....	3,451	3,271
Corn.....	1,426	891

* Including 26,446 tons at Port Costa, including 10,450 tons at Stockton.

† Including 5,276 tons at Port Costa, 1,466 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show a decrease of 12,201 tons for the month of June. A year ago there were 64,359 tons wheat in Call Board warehouses.

During the past ten cereal years wheat exports were:

Season.	Centals.	Value.
1901-1902.....	9,624,805	\$10,279,951
1900-1901.....	8,000,872	8,276,078
1899-1900.....	6,500,875	6,666,874
1898-1899.....	2,286,760	2,758,994
1897-1898.....	10,112,641	15,261,951
1896-1897.....	10,101,592	13,042,688
1895-1896.....	10,293,957	10,629,629
1894-1895.....	9,605,296	8,607,135
1893-1894.....	8,966,268	9,449,612
1892-1893.....	10,553,619	13,825,632

FLOUR.

Business has not been brisk, either for shipment or on local account, but has been of fair proportions, considering the time of year and the quantity of flour offering. Prices are without quotable change, but concessions to buyers are of less frequent occurrence and less pronounced than has been the case most of the time for months past. It is not probable that easier prices will soon prevail than are now current.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

Market has not changed materially, either in general tone or in quotable values, since date of last review. New barley is being offered rather freely, but in few instances is it being crowded to sale at the expense of letting buyers dictate their own terms. Stocks at Port Costa are on the increase, but there have been no cargo clearances of this cereal thus far this month. Fully as much European demand as experienced the past season is looked for, however, and prices may average slightly higher, although the market at present is not noteworthy for strength, and seldom is at the opening of the season.

New Barley.....	85 @ 85
Feed, No. 1 to choice old.....	92 1/4 @ —
Feed, fair to good.....	90 @ 92 1/4
Brewing, No. 1 to choice.....	1 00 @ 1 02 1/2
Chevalier, No. 1 to choice.....	@ —
Chevalier, poor to fair.....	@ —

OATS.

Buyers are not taking hold very freely, being uncertain about values having yet touched bedrock. Prices are now at tolerably low levels, oats at existing rates being about as cheap relatively as barley, but oats have been cheaper, and there are not a few dealers who are looking for lower values than now current. Much will depend on how rapidly the crop is rushed to market. Owing to the high prices of the past year, there is a greatly increased acreage in this cereal the current season.

White Oats, fancy feed.....	1 30 @ —
White, good to choice.....	1 25 @ 1 27 1/2
White, poor to fair.....	1 10 @ 1 15
Gray, common to choice.....	1 10 @ 1 25
Milling.....	1 30 @ 1 32 1/2
Surprise, good to choice.....	1 30 @ 1 35
Black Russian.....	1 00 @ 1 10
Red.....	1 02 1/2 @ 1 17 1/2

CORN.

Offerings are of quite moderate proportions and are being very steadily held, but movement is not brisk, buyers confining their purchases as a rule to most immediate and urgent needs. It is doubtful if there will be any radical changes in values, either upward or downward, in the near future.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/2 @ 1 52 1/2

RYE.

Market is quiet and lacking in firmness. Home requirements are exceedingly light, and exporters thus far show no willingness to operate, except at low figures.

Good to choice.....	80 @ 85
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BUCKWHEAT.

Nothing doing locally in this cereal. Quotations are based on latest reported sales.

Good to choice.....	1 55 @ 1 70
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BEANS.

Business is of a light order. While the demand at present is rather slow, offerings are not of heavy volume, and it is the exception where any undue pressure to realize is being exerted. Aside from fairly liberal stocks of White and Pink beans and a moderate quantity of Bayos, supplies are of decidedly light proportions. Most of the beans now on market are in second hands.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	2 35 @ 2 50

Lady Washington.....	2 35 @ 2 50
Pinks.....	2 05 @ 2 20
Bayos, good to choice.....	2 90 @ 3 10
Reds.....	2 25 @ 2 75
Red Kidney.....	3 50 @ 3 75
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	4 90 @ 5 10
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

The same dullness previously noted is prevailing. There is no scarcity of Green Dried Peas on market, and little inquiry at present for this variety. Niles Peas are in too insignificant spot supply to be quotable in a wholesale way. Millers expect to replenish stocks of Niles with importations from the East.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	@ —

WOOL.

There is very little wool now offering here from first bands, and not likely to be until Fall clip begins to arrive in wholesale fashion. There is no trouble in securing custom at full prevailing values, market being strong at the quotations. Some Fall lamb's wool has already come forward from San Joaquin valley, the shearing being unusually early this season.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	15 @ 17 1/2
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 16
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

The market is reported firm, with few hops remaining in either first or second hands. Attention is now being given largely to coming crop, with contracts reported for choice Sonomas up to 16c, and still higher figures being asked. The firmness is based mainly on rather poor crop prospects East and in England, in connection with very light carry-over stocks. Hops of 1901 crop are quotable nominally at 18 @ 20c for good to choice, but extreme figure would be difficult to realize in a wholesale way.

HAY AND STRAW.

The wholesale market has continued well stocked with hay, and has not inclined in favor of sellers to any noteworthy degree, unless for strictly choice to fancy, the majority of buyers taking hold slowly at full current rates. Many producers prefer carrying to unloading at prices now obtainable. The bay of this season's curing is showing good average condition. About 2500 compressed bales went outward the past week per sailing vessels for the Hawaiian Islands.

NEW.

Wheat, good to choice.....	8 00 @ 10 50
Wild Oat.....	6 50 @ 8 50
Barley.....	6 00 @ 8 00
Volunteer.....	5 50 @ 7 50
Alfalfa.....	@ —

OLD.

Wheat, good to choice.....	9 00 @ 12 50
Wheat and Oat.....	9 00 @ 11 00
Oat, good to choice.....	8 00 @ 10 50
Barley.....	7 50 @ 9 00
Clover.....	7 00 @ 8 50
Compressed.....	9 00 @ 12 50
Straw, 1/2 bale.....	40 @ 50

MILLSTUFFS.

Spot supplies of Bran and Middlings remain of small proportions and high prices prevail, the quotable range being without special change from the figures last noted. Rolled Barley is in fair supply and market is barely steady. Corn is held at generally unchanged figures, with movement slow at the prices asked.

Bran, 1/2 ton.....	18 00 @ 19 50
Middlings.....	21 00 @ 23 00
Shorts, Oregon.....	18 50 @ 20 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

The market for the several kinds quoted herewith is exceedingly quiet. Values are without quotable change, but in the absence of any noteworthy trading, are necessarily largely nominal. Flax is in fair supply. Mustard is scarce. Stocks of Bird Seed are not heavy enough to admit of any wholesale business worth mentioning.

Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 50 @ 3 75
Mustard, Trieste.....	3 30 @ 3 60
Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 1 1/2
Hemp.....	3 1/2 @ 3 1/2

BAGS AND BAGGING.

Grain Bags are moving into the interior in considerable quantity, to satisfy the

requirements of the various threshers now engaged in harvesting the crop. No fears are entertained of there being any shortage in the supply. Values are ruling fairly steady, quotations remaining as last noted. Fruit Sacks are beginning to be inquired for in wholesale fashion, dealers quoting practically same figures as for some time past.

Calcutta Grain Bags, huyer June-July.....	@ —
Calcutta Grain Bags, spot.....	6 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/2
San Quentin Bags, 100.....	5 50 @ —
Wool Sacks, 4 lbs.....	3 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/2 @ —
Gunnes.....	@ —
Bean Bags.....	5 1/2 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2, 6, 6 1/2
Fruit Sacks, Jute.....	7 @ 7 1/2

HIDES, PELTS AND TALLOW.

There is a good demand for Hides and current values are being well sustained. Pelts are in fair request, and while not quotably higher, better average prices are being realized than were obtainable when wool was dragging. Tallow sells readily at full current values, being in good request for shipment.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/4 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	@ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/2 @ —	8 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/2	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	@ 3 00
Salted Horse Hides, medium.....	2 25 @ —	@ 2 50
Salted Horse Hides, small.....	1 50 @ —	@ 2 00
Dry Horse Hides, large.....	1 75 @ —	@ —
Dry Horse Hides, medium.....	1 50 @ —	@ —
Dry Horse Hides, small.....	1 25 @ —	@ —
Dry Cotts' Hides.....	50 @ —	@ —
Pelts, long wool, 1/2 skin.....	80 @ —	@ 1 20
Pelts, medium, 1/2 skin.....	50 @ —	@ 75
Pelts, short wool, 1/2 skin.....	30 @ —	@ 40
Pelts, shearing, 1/2 skin.....	15 @ —	@ 30
Deer Skins, best summer.....	35 @ —	@ —
Deer Skins, good medium.....	— @ —	@ 30
Deer Skins, thin winter.....	— @ —	@ 21
Elk Hides.....	10 @ —	@ 12
Tallow, good quality.....	5 1/2 @ —	@ —
Tallow, No. 2.....	4 1/2 @ —	@ 4 1/2
Goat Skins, perfect.....	30 @ —	@ 37 1/2
Goat Skins, small.....	10 @ —	@ 20
Kid Skins.....	5 @ —	@ 10

HONEY.

Stocks are of light volume and market cannot be termed favorable to buyers, but demand is not brisk at prices now generally asked, dealers waiting as a rule for offerings to be presented to them. If pressure to realize were exerted, the material shading of rates to buyers would be necessary to effect noteworthy wholesale transfers.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

BEESWAX.

Market shows same condition previously noted, being firm at the quotations.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

While there are no great quantities of Beef being consumed at present, as is usual during hot weather, values lately current continue to be well maintained, especially for prime to choice. Mutton is in fair request and market is moderately firm at the prices quoted, offerings not being very heavy. Lamb is in very moderate receipt and in prime condition is not lacking for custom at prevailing values. Veal is in light supply and readily brings full current figures when in desirable condition. Hogs are arriving in just about sufficient quantity to satisfy the immediate demand for fresh pork, leaving little for packers to operate upon.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/2 @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/2
Hogs, hard grain fed, 125 to 200 lbs.....	6 @ —
Hogs, small, fat.....	6 1/2 @ —
Hogs, large, hard, over 200 lbs.....	6 1/2 @ 6 1/2
Hogs, soft or acorn fed.....	@ —
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 1 lb.....	8 @ 9 1/2
Veal, large, 1 lb.....	7 @ 8 1/2
Lamb, spring, 1 lb.....	9 @ 9 1/2

POULTRY.

Demand was not particularly active for poultry of any description, as is to be expected at this time of year. Inquiry for home product was mostly for young

stock, Broilers, Fryers and Young Roosters in prime to choice condition, such selling as a rule to fair advantage. Common old fowls, more especially Small Hens, were in poor request, most of the trade in old chickens being in Eastern stock. There were only light arrivals of Turkeys, Ducks and Geese, and very limited inquiry for either kind.

Turkeys, dressed, choice.....	—@—
Turkeys, alive, Hens, # lb.....	12 1/4 @ 13
Turkeys, alive, Gobblers, # lb.....	12 1/4 @ 13
Hens, California, # dozen.....	4 00 @ 5 00
Roosters, old.....	4 50 @ 4 75
Roosters, young (full-grown).....	5 00 @ 6 50
Fryers.....	3 50 @ 4 50
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	2 00 @ 2 50
Ducks, old, # dozen.....	3 00 @ 3 50
Ducks, young, # dozen.....	3 50 @ 4 50
Geese, # pair.....	1 25 @ —
Goslings, # pair.....	1 25 @ —
Pigeons, old, # dozen.....	1 75 @ —
Pigeons, young.....	1 50 @ —
Hare, Belgian, large, # doz.....	4 50 @ 5 00

BUTTER.

Receipts of fresh are on the decrease and the quality is also falling off. For strictly select the market is moderately firm, with sales to special custom at an advance on figures warranted as a quotation. Buyers content to take defective stock have no trouble in satisfying their wants, there being a superabundance of both creamery and dairy product of this description.

Creamery, extras, # lb.....	21 @ —
Creamery, firsts.....	20 @ —
Dairy, select.....	20 @ —
Dairy, firsts.....	19 @ —
Mixed store.....	17 @ 18

CHEESE.

The improved figures lately established are being well maintained. There are no heavy quantities arriving or being offered for future delivery. The market shows decidedly healthy condition for all desirable qualities.

California, fancy flat, new.....	10 @ 10 1/2
California, good to choice.....	9 1/2 @ 10
California, fair to good.....	— @ —
California, "Young Americas".....	10 @ 11 1/4

EGGS.

Strictly select fresh are not in large supply and in a small way are selling above quotations. Most of the eggs now on market are more or less defective, and receivers are having all sorts of trouble, the buyers kicking about the quality, and the producers, as also the shippers from the interior, complaining about the returns.

California, select, large, white and fresh.....	17 1/4 @ 18
California, select, irregular color & size.....	16 @ 17
California, good to choice store.....	14 1/2 @ 15 1/4

VEGETABLES.

There were fairly liberal supplies of most varieties ordinarily in free receipt at this time of year. Changes in quotable rates were not very numerous, but such as were effected were mostly in favor of the buying interest. Tomatoes, Cucumbers, Summer Squash and Peppers were all in increased receipt and cheaper. Green Peas of choice quality arrived sparingly and met with a firm market. Onions ruled steady, with the bulk of offerings under pool control.

Asparagus, # box.....	1 00 @ 2 00
Beans, String, # lb.....	2 @ 3 1/4
Beans, Wax, # lb.....	2 1/2 @ 4
Cabbage, choice garden, # 100 lbs.....	50 @ —
Corn, Green, Alameda, # crate.....	1 50 @ 1 75
Corn, Green, # sack.....	50 @ 1 00
Cucumbers, # large box.....	65 @ 90
Egg Plant, # box.....	75 @ 1 00
Garlic, # lb.....	2 @ 2 1/2
Onions, Yellow Danver, # cental.....	1 00 @ 1 25
Onions, New Red, # cental.....	60 @ 75
Peas, Sweet garden, # lb.....	2 1/4 @ 3
Peas, good to choice, # sack.....	— @ —
Peppers, Green Chile, # lb.....	7 @ 10
Peppers, Bell, # box.....	50 @ 75
Rhubarb, # box.....	40 @ 75
Summer Squash, Bay, # large box.....	50 @ 90
Summer Squash, # small box.....	35 @ 50
Tomatoes, # small box.....	35 @ 60
Tomatoes, River, # large box.....	1 25 @ 1 50

POTATOES.

Arrivals were of quite fair proportions most of the week, giving a more than ample supply of other than most select qualities for all immediate needs. The quotable range of prices remained much as last noted, but only for the very best did the market display any firmness. Old Oregon Burbanks are still on market in limited quantity, but they are not meeting with any special inquiry, only an occasional small order for seed; old will soon be wholly out of stock.

Burbanks, good to select, # cental.....	75 @ 1 40
Early Rose.....	75 @ 1 00
Garnet Chile.....	1 00 @ 1 10
Old Burbanks in sacks, # cental.....	1 00 @ 1 15
Petaluma and Tomales Burbanks.....	— @ —
Sweets, Merced, # cental.....	— @ —

The Fruit Market.

FRESH FRUITS.

A prominent feature of the week in the fresh fruit market was the arrival Monday from Courtland on the Sacramento

river of the first Bartlett Pears of the season. They were of fair quality for this early date and were held at \$1.00@1.25 per regular size box. Few Apples of good quality have yet arrived this season, most offerings being windfalls. Apricots did not arrive so freely as preceding week, and market was in consequence in slightly better shape for sellers, although prices continued at low levels. Peaches were in increased supply and market for this fruit was easier, the late varieties beginning to put in an appearance. Cherries have nearly had their run; although not many are now coming forward, wholesale prices are no better if of as good average as when arrivals were heaviest; most of the canners and preservers have stopped buying. The first Cantaloupes from Winters arrived Monday, the initial shipment being held at \$1.75@2.00 per crate. Cantaloupes, Nutmeg and Watermelons from Idaho continued to be offered, the latter at practically unchanged figures, while Cantaloupes and Nutmeg Melons inclined more in favor of consumers. Most kinds of Berries were well represented and prices were in the main low, especially canners' figures, inside quotations being based on latter.

Apples, # fancy, 4-tier box.....	—@—
Apples, good to choice, # 50-lb. box.....	75 @ 1 00
Apples common to fair, # 50-lb. box.....	40 @ 65
Apricots, Royal, # crate.....	35 @ 60
Apricots, # basket.....	20 @ 30
Cantaloupes, # crate.....	1 25 @ 1 75
Cherries, Black, # box.....	30 @ 65
Cherries, Black, in hu k, # lb.....	2 1/4 @ 5
Cherries, Royal Anne, # box.....	40 @ 65
Cherries, Royal Anne, # lb.....	2 1/4 @ 5
Blackberries, # chest.....	2 0 @ 3 50
Raspberries, # chest.....	3 50 @ 7 00
Currants, # chest.....	1 75 @ 3 50
Gooseberries, Oregon Imp'd, # chest.....	—@—
Gooseberries, English, # lb.....	—@—
Grapes, Thompson Seedless, # crate.....	1 25 @ 2 00
Logan Berries, # chest.....	2 00 @ 4 00
Nutmeg Melons, # crate.....	1 25 @ 1 75
Peaches, # box.....	30 @ 60
Peaches, # basket.....	30 @ 50
Pears, Early, # 20-lb. box.....	25 @ 50
Plums, Burbank, # box.....	40 @ 75
Plums, Clyman, # box.....	25 @ 40
Plums, Simoni, # box.....	50 @ 75
Prunes, Tragedy, # crate.....	35 @ 50
Strawberries, Longworth, # chest.....	4 0 @ 7 00
Strawberries, Meinda, # chest.....	3 00 @ 5 00
Watermelons, Idaho, apiece.....	20 @ —

DRIED FRUITS.

Apricots are arriving in considerable quantity, and attention of dealers is now being principally given to this fruit. For deliveries in sweat boxes 5¢. is the general bidding figure for prime stock, little or no distinction being made as to section. For San Francisco delivery of prime to choice Apricots in sacks the quotable range is 6¢@7¢, although at present writing it would have to be an exceptionally fine quality for which wholesale custom could be secured at extreme figures above named. On new Prunes dealers are booking some orders on the 2 1/4¢@2 1/2¢ basis for the four sizes, latter figure for Santa Claras, and are bidding 1¢. less, or on the 2¢@2 1/2¢ basis for stock to fill the orders in question. Samples of new Apples put in an appearance this week, but it will be probably several weeks before there will be new Apples on market in sufficient quantity to admit of filling orders. Values are yet undetermined. Eastern Apples are quoted at 6¢. for prime new, October-November delivery. In forward deliveries of new crop Peaches, Pears or Plums there is virtually nothing doing. Dealers are talking 4 1/2¢@7¢. for Peaches, as to grade, and 6¢@7¢ for standard to choice Pears, October, these figures being for fruit in sacks, delivered at producing points in carload lots. Dealers expect to secure Figs at 2¢@2 1/2¢. in the sweat boxes. In a few weeks values for most kinds of fruit of current crop will like y be sufficiently established to enable giving tolerably accurate quotations. There will certainly be by that time well-defined values for July and August deliveries.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	—@—
Apricots, Royal, good to choice, # lb.....	6 @ 6 1/4
Apricots, Royal, fancy.....	7 @ 7 1/4
Nectarines, # lb.....	—@—
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/4
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2¢@3¢; 50-60s, 4¢@4 1/2¢; 60-70s, 3 1/2¢ @ 3 3/4¢; 70-80s, 3 @ 3 1/4¢; 80-90s, 2 1/2¢ @ 2 3/4¢; 90-100s, 2¢ @ 2 1/4¢; these figures for 1901 crop.	—@—

COMMON SUN-DRIED.

Apples, sliced.....	—@—
Apples, quartered.....	—@—
Peaches, unpeeled.....	6 @ 6 1/4
Pears, prime halves.....	—@—
Plums, unpitted, # lb.....	1 1/4 @ 2 1/4

CITRUS FRUITS.

The same quiet market previously noted for Oranges is still being experienced, with stocks and demand both light. Prices are somewhat irregular and at a wide range, largely owing to great difference in quality of offerings. Lemons are

in fair request, but inquiry is mainly for best qualities, market for such being moderately firm at current rates, while common drag at low figures. Limes are in fair supply, and prices the same as last quoted.

Oranges—Navels, # box.....	—@—
Mediterranean Sweet.....	1 00 @ 2 50
Valencias, # box.....	1 50 @ 3 50
Seedlings, # box.....	1 00 @ 1 50
Tangerine, quarter box.....	—@—
Lemons—California, select, # box.....	3 25 @ 3 50
California, good to choice.....	2 00 @ 3 00
California, common to fair.....	1 25 @ 2 00
Grape Fruit, # box.....	1 50 @ 2 50
Limes—Mexican, # box.....	5 00 @ 5 50

NUTS.

Some sales of new Almonds for future delivery are reported at 11¢@11 1/2¢ for the Hatch varieties in carloads at primary points, the latter figure being for Non Pareils. Soft shells are quoted for forward delivery at 8 1/2¢@9¢ and hard shells at 5 1/2¢@6¢ wholesale at producing points. Eastern Peanuts are higher. Spot stocks are light of both domestic and imported.

California Almonds, shelled.....	16 @ 19
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	12 @ 12 1/2
Cal. White Walnuts, No. 2 soft shell.....	10 @ 11
Cal. White Walnuts, No. 1 hard shell.....	10 @ 11
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/4 @ 5 1/4
Peanuts, Eastern, hand-picked.....	6 @ 7

WINE.

Although there is something doing in the wine market, both in the way of transfers of wines from first hands, and in the contracting for delivery later on of wine grapes now maturing, values cannot be said to be very clearly defined, the market being in somewhat unsettled condition. For a lot of about 50,000 gallons dry wine, mixed vintages, 2 years old or better, 26¢. is asked, St. Helena delivery. A lot of wine of much the same character and equally good was purchased at 24¢. at Rutherford, costing 25¢. San Francisco delivery. A contract is reported for 800 tons of dry wine grapes, mostly red, at \$18 per ton at Cordelia, with the provision that if \$25 per ton is paid this season for grapes in Napa county, \$22 per ton, instead of \$18, shall be paid for above lot.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	102,782	89,443
Wheat, centals.....	73,345	19,990
Barley, centals.....	23,350	70,980
Oats, centals.....	30,191	19,220
Corn, centals.....	2,097	4,995
Rye, centals.....	135	1,437
Beans, sacks.....	914	1,437
Potatoes, sacks.....	11,277	14,715
Onions, sacks.....	2,007	1,887
Hay, tons.....	3,019	1,839
Wool, bales.....	1,326	2,469
Hops, bales.....	20	20

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	75,464	54,024
Wheat, centals.....	49,541	100
Barley, centals.....	10,939	21
Oats, centals.....	186	1,114
Corn, centals.....	251	44
Beans, sacks.....	647	6
Hay, bales.....	2,672	251,872
Wool, pounds.....	12,346	50
Hops, pounds.....	1,213	2,513
Honey, cases.....	6	6
Potatoes, pack's.....	251	251

California Dried Fruit at New York.

NEW YORK, July 9.—Evaporated apples, common, 7¢@9¢; prime dry tray, 9 1/2¢@10¢; choice, 10 1/2¢@10 3/4¢; fancy, 11¢@—c.
California Dried Fruits.—Market shows steadiness, with fair movement, considering the light spot offerings.
Prunes, 3¢@6 1/4¢.
Apricots, boxed, 10 1/2¢@14¢; bags, 10¢@12¢.
Peaches, unpeeled, 8 1/2¢@10 1/2¢; peeled, 12¢@16¢.

Patrons of Husbandry.

Oakland Grange.

TO THE EDITOR:—Oakland Grange held an enjoyable gentleman's night Saturday, July 5th. The following programme was ably rendered: Vocal selections, Mr. Sanford; comic reading, Mr. Chas. W. Emery; recitation, Mr. Woodruff. The gentlemen then served ice cream and cake and candy, after which amusing stories and conundrums were propounded.
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ON THE ROAD.

In the Sacramento Valley.

Written for the PACIFIC RURAL PRESS
by F. P. Cook.

BARLEY BUSINESS.—It is reported at Winters that Mr. J. L. Harlan, a large raiser of barley in Yolo county this year, as soon as he had harvested enough to enable him to see what the quality of his crop and probable yield was, sent samples to all the dealers in San Francisco. They responded to the invitation to bid, there was a lively time in the field, and the crop of 10,000 sacks (estimated yield) went at \$17.15 per ton, f. o. b. cars, as brewing barley. The barley was of fine quality, but the business methods of the man had much to do with the sale.

Last year at this time there was a large amount of barley on hand in the warehouses of this district. This season there is none; and it is the opinion of one of the large raisers of barley in Yolo county, who is otherwise in position to be familiar with trade conditions and price prospects on that cereal, that barley should this year bring the farmer \$1 per hundred for standard grade, since the present year's crop is only fair; but dealers at Arbuckle, Colusa county, say that the barley crop in that vicinity has been pretty well bought up at 80 to 82½ cents, a few extra quality lots bringing a few cents more. At the same time, in Yolo county, though the buying started at 80 cents, the generally offered and expected figure had reached 87½ cents Thursday of last week, and as early as the 17th 90 cents per hundred was paid the farmer by a local buyer for a carload which went from Merritt station to Wood, Curtis & Co., at Sacramento, at 95 cents, to be used for feed, it may be understood. There seems to be a good foundation in the Sacramento valley for the opinion that barley should be worth \$1, at least, so far as the lack of hold-over and the size of the present crop are concerned.

There is no excitement yet about wheat in Yolo county, but in Colusa dealers are doing something at about \$1.

AT WOODLAND.—H. S. Martin of the Woodland creamery is in charge of the Dixon creamery while Supt. Mason of the latter is on a short Eastern trip.

The warehouse and milling buildings of the Woodland Milling Co., an independent local corporation, located on a piece of land donated from the Dixon place, along the railroad, just south of town, are nearing completion. The warehouse is 50x300 feet, corrugated iron sheathing, having a storage capacity of 5000 tons. The mill is 32x50 feet, three stories and cement basement. The machinery will include sifters of the gyrator system, furnished by M. O'Brien, San Francisco. The capacity of the mill will be 100 barrels in twenty-four hours. The motive power will be electricity. The company is capitalized for \$35,000.

The Woodland cannery began operations the first of this week—at least, it was expected it would last Saturday. It has a competent foreman. The plant is located in a cement-floored building, formerly used as a warehouse, near the depot. The capital of the company—\$20,000 subscribed—is wholly local, and the company will operate independently of the Association.

PEAR SALE.—One of the largest orchards in Yolo county last year was offered for its second grade dried pears 4 cents, and for the first grade 7 cents. The manager, who is one of the shrewdest men in the orchard business, made direct connection personally with New York jobbers, and sold the pears for 8 cents and 12 cents per pound, respectively.

CANNERIES.—There is an opening for

a good practical cannery man at Yolo. The old brick flouring mill building on the bank of Cache creek, just across from the Yolo orchard, can be had on easy terms, and there are about 1500 acres of bearing orchard that would naturally be tributary to a cannery so located. The project would probably interfere with the cannery at Woodland.

There is no cannery at Davisville. Most of the canning fruit raised there has heretofore gone to Sacramento, but there was, last week, a possibility that the output of the Oak Shade orchard of 320 acres, near by, might go to Woodland.

Foster Bros.' cannery at Tremont.—a cannery and grain warehouse station 5 miles south of Davisville—will not go into service until peach time. The pack will be practically confined to peaches and tomatoes. The output will be of a high grade, and will be used only to fill orders. The selling agent is C. W. Pike & Co., San Francisco. There will be three new brands in tomatoes and one in peaches. The new cannery building is 30x200 feet, with engine room 30x30 extra. Foster Bros. also have a corrugated-iron grain warehouse with a capacity of 6000 tons, at Tremont.

NURSERY.—Eli Snider, Davisville, has 600,000 seedling nursery trees coming on. Of June buds for this year there will be 100,000; the balance dormant buds. The output will be about one-third peaches, cling and Lovell, the balance about equally divided between apricot, prune and almond.

LAND SALE.—The tendency among residents in Davisville and vicinity who have land is to hold on to it and get more. When the Oak Shade orchard tract was sold, last spring, there was talk of subdividing it into small tracts, but the entire 320 acres were finally sold intact to a gentleman from Wisconsin.

ROADSIDE WALNUTS.—There is talk of grafting to English walnut the black walnut trees that border the roads so beautifully for miles in Yolo and Solano counties, especially in the former. Such change has been made in a number of cases in Solano county.

AN IRRIGATION SYSTEM.—Some doubt has been expressed in Yolo county as to the possibility of the materialization of the plan of irrigation from Cache creek laid out by the Chamber of Commerce of fifteen, on account of the present existence of private systems of irrigation from the same source; but Mr. C. W. Thomas, attorney for the committee and personally interested in its project, says that there will be no difficulty in incorporating the private systems as part of the public one, speaking both as to legal and other difficulties. The cost of the system will not be over \$1 per acre per year for ten years on 40,000 acres. All proceedings so far have been perfectly in line with Pres. Roosevelt's utterances on irrigation and the Newlands bill, and have been wholly based on the recent Government surveys.

The Capay Water Co., co-operative, was ready for incorporation ten days ago. The papers may have been filed at this date. There are seventy members, and the organization covers 6000 acres lying between Guinda and Rumsey. The project is being pushed along without the aid of bonds. The estimated cost is \$4 per acre down for construction, including main ditch and laterals. Cache creek will be the source of supply. Work will begin immediately after the fruit harvest, and the system will be ready by the time of flood water. There are practically no obstacles. It is calculated that maintenance of the system after construction will not cost more than 75 cents per acre per year and may not be more than 35 cents.

Mr. C. W. Thomas of Woodland, president of the Chamber of Commerce, at my request prepared the following statement concerning this enterprise:

The source of the supply for the Capay Water Co. is from Cache creek, the outlet of Clear lake. When organized and the ditches open, we expect to be able to carry quite a body of water from the canyon between the intake of the ditch to its outlet.

There are several long canyons which furnish an abundance of water for early fall and late spring irrigation, and, of course, for flood water irrigation.

We have already had an experiment near Guinda carried to a certainty, demonstrating the value of winter irrigation for orchards. Some two years since Mr. J. F. Dearing, having charge of the fruit farms of Mr. Sprole and Mr. Sharpe, opened a ditch of about 1 mile in length from a large canyon, something like three-quarters of a mile from the orchards, and one proper flood gate and waste weirs conducted the canyon flood water to these orchards, and in this way succeeded in irrigating, I think, something like 135 acres. The success of the experiment will be seen by anyone who will take a view from any foothill elevation, and, from a closer inspection of the orchards, it is demonstrated that the silt carried by the water irrigation enriches the soil to the benefit of the trees, makes cultivation easier and forces a lower growth for the protection of the tree against sun blister. Some time when you are in Capay valley, if you will notify Mr. Dearing in advance, he will take pleasure in showing you just what has been done in this particular. It goes a long way to convince me that profitable irrigation can be had from the canyons' break through our foothills. Again, on Mr. Sharpe's mountain and foothill land they have a prospect for a fine artesian well. The investigation I have made leads me to believe that within the near future we will discover an artesian flow somewhere between Capay valley and the tule lands in Yolo county.

BARLEY IN COLUSA.—The largest grain buyer in Colusa estimates that there were two-thirds of the barley crop of Colusa, Glenn and Sutter in raisers' hands unsold last Monday. There was a sag in market price of barley at Colusa, June 30, from 82½ to 85 cents for standard and 85 to 90 cents for brewing of the week before to 80@82½ cents for standard and a possible 85 cents for brewing, and not much of a disposition to buy at that rate. There is reason to believe that 87½@90 cents was paid, week ending June 28, for a good many lots, and it is reported on what seems to be good authority that many contracts have been made at 90 cents.

This will remind you that the pain of strains, bruises and sprains, common incidents of active outdoor life, is drawn from aching bodies by Perry Davis' Pain-killer, as a magnet draws bits of iron from sand.

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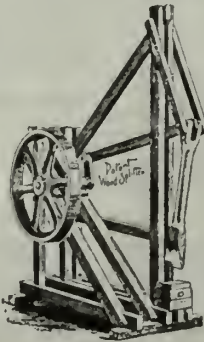
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1. 80 acres, Placer Co., Calif., \$500.
 2. 160 acres, Placer and Nevada Cos., \$1600.
 3. 608 acres, Nevada Co., adjoining No. 2, \$7286.
 4. 120 acres, Nevada Co., near Nos. 2 and 3, \$1200.
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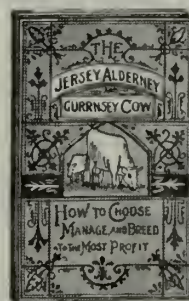
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FRUIT PRESERVATION.

Apricot Drying in Orange County.

By D. EDSON SMITH at the Santa Ana Farmers' Club.

The apricot should be allowed to remain on the tree until it is perfectly ripe, at which time a slight jar on the limb on which it is growing will cause it to drop. There are two methods of getting the ripe fruit from the tree. One method is to pick by hand. This requires carefulness and expertness, because if the 'cot is pinched to find out if it is soft enough to pick and is then left on the tree it is pretty sure to begin to rot where the fingers pressed it; so every 'cot taken hold of should be pulled off; but unless you are careful and expert you will pick many that would have been more perfect to have remained on the tree a day or two longer.

If the trees are large, requiring ladders to get up into them, then one will knock off more or less unripe fruit, in spite of every precaution, which fruit is a total loss.

SHAKING THE TREE.—For some years past I have adopted the other method, which method I learned of Dr. A. L. Cole of North Main street, after seeing its successful working in his orchard. It consists in having a 1x1½-inch pole, 15 or 20 feet long, according to the height of your trees. Or have two poles of different lengths, one for the largest or tallest tress and the other for the smaller ones. On the small end of the pole securely fasten the largest size fishhook. With this pole, hook on to a limb on which appears to be ripe fruit and give a quick jerk or jar, the force of which will have to be determined by a little practice. This method also requires intelligence and carefulness, but when the knack of doing it is once acquired, one man can do all the shaking off for a large orchard; while if the fruit is hand picked from the tree, each picker must be an expert, careful and with a trained eye that will allow the fingers to touch no fruit but that which is thoroughly ripe.

At first I was quite opposed to this method of shaking off the ripe fruit, for it seemed to me that such a process would necessarily bruise it and in this way deteriorate the quality of the finished product, but years of practice of this method have fully assured me that not the slightest difference can be detected between the hand picked product and that which is shaken. Fruit, however, should not be shaken off when the early dew is on, or some of the dust will stick to it. Where fruit is allowed to remain on the tree as long as it ought to—until it is thoroughly ripe—some of it will drop off in the night, if the nights are warm. This fruit can be picked up while the dew is drying off.

GATHERING THE FRUIT.—Some successful orchardists stretch a large canvas under the tree to catch the falling fruit, and when the fruit is shaken off the corners of the canvas are quickly gathered up and the fruit is dumped into boxes. I am not satisfied that that is the best way, and I have my pickers gather the fruit from the ground, rejecting all leaves and defective fruit. But one can easily try both methods if they wish. It pays me to hire good reliable men to pick up my apricots rather than boys. The fruit is picked up in baskets and carefully emptied into boxes holding fifty pounds. These boxes are placed upon a sled or a low-wheeled wagon, and drawn to the

cutting shed, where they are assorted by an intelligent man into two sizes. I find that this extra labor pays in the end. If not sorted the small fruit is sure to dry up before the large fruit is ready to take up, and the sorting can be done much cheaper before the fruit is cut than after it is partially dried on the tray. Of course, in large orchards it is much more economical to use a machine to do the grading than to do it by hand.

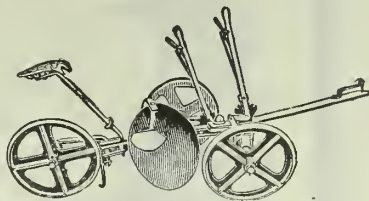
CUTTING AND PITTING.—The next operation is the pitting of the fruit. And here again in great economy is found in working on a large scale. With the Briggs new improved fruit cutting and pitting machine one man is capable of cutting and pitting one ton of apricots an hour, while it would take fifteen or eighteen cutters to do the same amount of work. But the machine is too expensive for the small, isolated orchard. Hand cutting is usually done by women, who cut the fruit in halves, remove the pit and lay the halves on trays, with the cut side up. A convenient sized tray is 2x3 feet, made of 1x1½ inch pine, 2 feet long for the ends, ½-inch lath for the sides, and four sawed redwood shakes, strengthened in the middle by a lath, to which each shake is fastened by a small clenched nail. The trays filled with the cut fruit are stacked in a practically air-tight box or house, where the fruit is subjected to the fumes of burning sulphur.

SULPHURING.—The amount of sulphur required, and the time necessary for a perfect sulphuring of the fruit depends on the quality of the sulphur and the tightness and size of your sulphur box. Where all conditions are right, I consider about one hour the proper time. But there is a sure guide, which is: When the fruit is properly sulphured, the cups of the pitted fruit will be partly filled with liquor. If, when you open your sulphur box, the cup of the fruit does not contain a perceptible amount of juice, either you have not used enough sulphur, or else the fruit has not been subjected to the fumes long enough. Unsulphured fruit is unattractive and largely unsalable. The flies and the bees are apt to make a sad mess of unsulphured fruit, unless it is protected by screening, which is not practicable on a commercial scale.

I know of no well-founded objection to sulphured fruit, and I have been studying the subject for twenty years. The usual objection is that the sulphuring of the fruit makes it unhealthy by impregnating it with sulphurous acid. In the first place, the amount of this acid remaining in the amount of fruit a person will eat at one meal is so slight that it is practically harmless. And, in the second place, this acid is readily dissolved in cold water, so that if the sulphured fruit is soaked a few hours previous to cooking, in cold water, and this water drained off and thrown away, there will be no acid remaining in the fruit and none of the flavor or nutritious quality of the fruit will be lost, unless it be a slight trace of sugar.

When the fruit is properly sulphured, it is removed from the sulphuring box to the drying ground, either by hand, or by drawing a stack of trays by horse power, on a sled or low-wheeled wagon, or on a cheap temporary car and track made of wooden rails, depending on the amount of fruit to be handled. It takes from four to six days to dry the fruit, depending on the size of the fruit and the clearness of the atmosphere. When properly dried the fruit will be soft and pliable, but there will be no feeling of stickiness when pressed between the thumb and finger. The fruit is usually

dumped from the drying trays into boxes holding about fifty pounds. It may remain in these boxes till it goes through the sweating process, or may be dumped into bins, or may be put directly into sacks or boxes.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

THE NEVER FAILING TILTON APRICOT.

The original tree of the Tilton apricot is again loaded with fruit this year, and it is estimated that it will bear over a thousand pounds of apricots. This is the apricot tree which has borne a heavy crop of fruit for years, when other apricot trees in the immediate vicinity have had the usual years of failure. Apricots are, as a rule, one of the most profitable and promising crops raised in California; the principal drawback has always been that there have been years when the crop has failed owing to frost and other conditions. But the Tilton apricot, with its frost-resisting qualities and its unbroken record of annually good crops, puts apricot culture on a certain basis. This tree is sixteen years old, and has borne thirteen annual crops, when other apricot trees have at different times failed. The fruit is large, well formed and of good flavor, and is excellent for both canning and drying.

Luther Burbank, the greatest originator of new fruits, says: "I thank you for the opportunity of testing the new seedling apricot, which arrived in perfect condition. The fruit ripens more evenly throughout than any other apricot which I have ever seen, and as it is early, smooth and of good size, and as you say productive. I must believe it one of the best of all apricots—possibly the best—taking into account its unusual productiveness."

The Oregon Nursery Company of Salem, Ore., who operate one of the largest and finest nurseries on the coast, are the original introducers of the Tilton. This nursery has an immense stock of all kinds of trees, handled systematically and under the most scientific methods.

Bear in mind the Tilton apricot! Before planting out any more deciduous trees better write to the Oregon Nursery Company, Salem, Oregon, for full particulars, prices, etc.

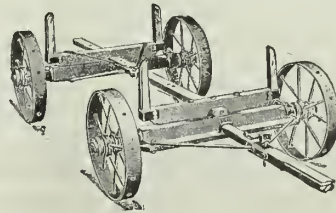
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The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

Address: F. J. CHENEY & CO., Toledo, O. Sold by Druggists, 75c. Hall's Family Pills are the best.

THE CO-OPERATOR.

Co-Operative Associations in Germany.

U. S. Consul F. D. Chester of Budapest sends the following statement, translated from a report drawn up by a gentleman connected with the Central Credit Co-Operative Association, who prepared it for the information of certain English agriculturists:

In Hungary, the organization and activity of co-operative associations are regulated by the commercial law of 1875 and by the new co-operative association law, passed in 1898.

The commercial law of 1875 leaves a wide field for the activity of co-operative associations, and does not limit their dealings to their own members alone.

The law of 1898 prescribes narrow limits both with respect to the field of activity and the circle of dealings, similar to the regulations existing in Germany; on the other hand, it assures to the associations privileges of tax and stamp exemptions and certain advantages in validating claims, and it establishes a capitalizing center for the associations, which exercises the right of supervision and control. This center is the National Central Credit Co-Operative Association.

Only such associations can unite with this center as are based upon the new law.

The foundation capital of the central association is raised by the founders and by its members. The founders contributed 4,182,000 crowns (\$848,946) and the members 785,000 crowns (\$139,055). The State entered the list of founders with 1,000,000 crowns (\$203,000), and by reserving to itself the right of appointment of the president, the two vice-presidents and two directors, and the approval of the election of the managing director, it exercises a deciding influence.

In the last three years 1328 co-operative associations have united with the National Central Credit Co-Operative Association, with 270,000 members, who subscribed for 560,000 shares, of a value of 27,500,000 crowns (\$5,582,500).

The members make use of the credit by means of notes or obligations, and when the associations are unable to meet the demands from their own capital, they indorse the notes in their hands (portfolios), assigning the obligations to the central association.

The money resources of the National Central Association are the foundation capital of about 5,000,000 crowns (\$1,015,000); State and other saving deposits, to-day about 11,000,000 crowns (\$2,233,000) in value; proceeds of interest-bearing bonds emitted under legal authority, to-day about 11,000,000 crowns (\$2,233,000) in value; and, finally, rediscount notes.

The small co-operative associations have afforded their members, up to to-day, about 56,000,000 crowns (\$11,368,000) credit, of which they covered about 19,000,000 crowns (\$3,857,000) from deposits of their more wealthy members and borrowed the rest from the central association.

The 1328 co-operative associations attached to the central association are, with few exceptions, credit associations, 1250 being distinctly economic and about 70 industrial in character.

Of the industrial associations about one-half are co-operative associations for obtaining and producing raw materials.

Among the economic associations are those for the sale of wine, grain and other products.

Celery Shipments.

The total shipments of celery for the season from the Orange county district were 580,767 dozen bunches of celery, for which was received \$55,046.61. Of these totals 244,834 dozen were of the white plume variety and sold for \$25.141 61, while 285,933 dozen bunches were of the golden self-blanching, and sold for a net price of \$29,905. After deducting all expenses and grouping all

the payments for like varieties, it is found that the white plume has averaged \$.05875 per dozen, while the golden self-blanching has averaged \$.07011 per dozen. These last figures include the charges for harvesting the celery.

The following table shows the shipments and returns received by the various companies handling celery for the Association during the past season:

Companies.	Cars.	Price.
Southern California Delicious Fruit Exchange...	433	\$52,213 84
Earl Fruit Co.....	9	1,433 98
Fay Fruit Co.....	6	1,165 85
Henry Wilson.....	1	182 94
Totals.....	449	\$55,046 61

In addition to the above are three carloads shipped at the end of the season, returns for which have not yet been received.

FRUIT MARKETING.

French Walnut Crop Poor.

Special Report of the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS

The walnut crop of 1902 in this region promises to be very poor. The spring has been cold and wet. There was a brief period of warm weather about the time of blossoming and the nuts set in fair quantity. Then the cold, wet weather came on again, and has continued up to the present time—June 20. Very many of the nuts fell, and of those which remained upon the trees a considerable proportion seem to be blighted and imperfect. No reliable estimate can be made as to the comparative amount of the crop thus destroyed, but it is the universal report that only a very small crop is possible.

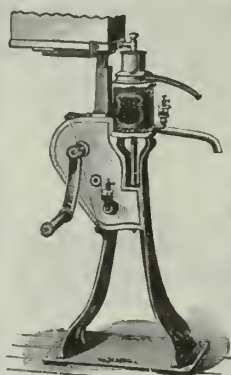
One naturally looks for discouraging reports at this season of the year. Such reports have a tendency to keep up prices, and there are many people who have or think they have an interest in such result. In the present case, however, my observation in the vicinity of this city fully confirms the report. If the causes which produced such result in this region operated in like manner in those departments especially devoted to the culture of walnuts, I cannot see how it is possible that there should be even an average crop. I feel justified, therefore, in reporting that beyond question the outlook for the walnut crop of 1902 in this region will be far below the average of recent years.

ALBION W. TOURGEE,
U. S. Consul.
Bordeaux, France, June 20, 1902.

French Prune Crop Short.

Special Report of the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS.

The same causes which have contributed to make the outlook for the walnut crop of France this year something more than bad have especially affected the outlook for prunes. The spring has been the coldest for twenty years and has also been unusually wet. This has so affected the prunes that I have not been able to find a single person interested in this trade who would express even a hope for anything like a fair crop. One large dealer, whose reports I have usually found very accurate, says: "There will practically be no prunes at all." Another says:



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"There will be no crop worth mentioning—not a kilo for export." My observation of trees in this vicinity, which I have watched year after year, confirms these reports. It may not be correct to say that the prune crop of 1902 of this consular district will be an entirely negligible quantity in this year's market, but it will probably closely approximate that condition. In addition to this, I can give no opinion, since I have no means of knowing whether a half-grown prune will be big or little when it gets through expanding. It is probably safe to say that the prune crop for 1902 will be the poorest known in this region for many years.

ALBION W. TOURGEE,
U. S. Consul.
Bordeaux, France, June 20, 1902.

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The National Irrigation Bill.

The passage by both houses of Congress, and the approval by the President, of the Irrigation bill, is the initial step toward the reclamation of the arid West. The bill, as passed, creates a reclamation fund from the sale of public lands in Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington and Wyoming, less the amount paid to local land offices and 5% due the State under existing laws for educational purposes, the reclamation fund to be used for the construction and maintenance of irrigation works in the States and Territories enumerated. Provision is made for the payment out of the treasury of any deficiencies in the allowance to agricultural colleges, owing to this disposition of public lands.

The Secretary of the Interior is authorized to examine, survey and construct the irrigation works and report the cost thereof to Congress at each session.

Section 4 provides for the letting of contracts for the work contemplated in sections, when the necessary funds are available in the reclamation fund for such section.

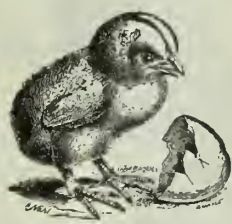
Section 5 provides that "no right to use of water for land in private ownership shall be sold for a tract exceeding

160 acres to any one land owner, and no such right shall permanently attach until all payments therefor are made, and no such sale shall be made to any land owner unless he be an actual bona fide resident on such land, or occupant thereof residing in the neighborhood of said land."

Section 6 authorizes the Secretary to use the reclamation fund for the operation and maintenance of the irrigation works.

Section 8 requires State control over waters of non-navigable streams, such as are used in irrigation.

A plain question: Do you really get the only Painkiller—Perry Davis'—when you ask for it? Better be sure than sorry. It has not, in 60 years, failed to stop looseness and pain in the bowels.



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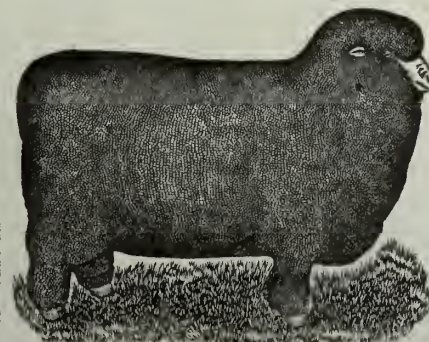


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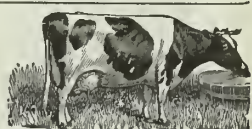
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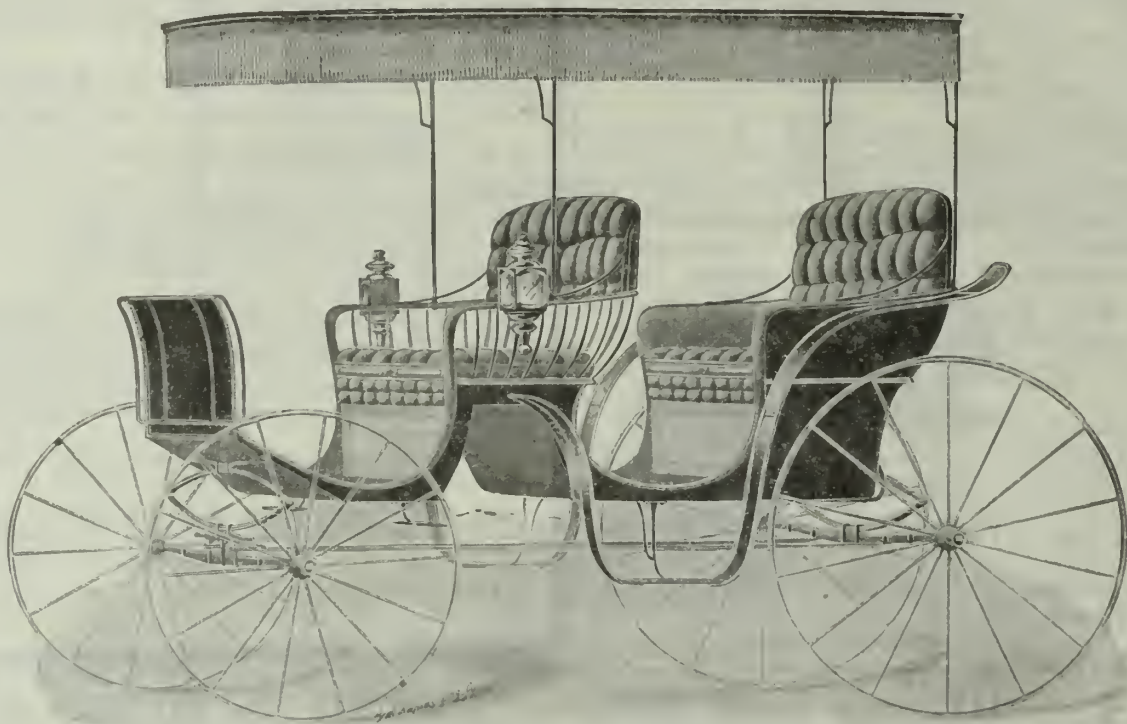
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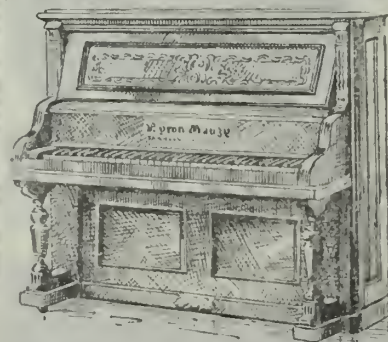
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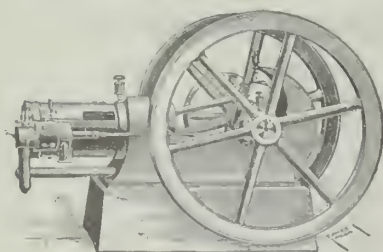
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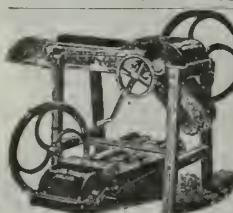
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 3.

SAN FRANCISCO, SATURDAY, JULY 19, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

In the Foothills.

The group of views on this page presents scenes in the foothills of Amador county, near Jackson, the county seat. They were taken on the grounds of the University substation to illustrate the report of the agricultural department of the State University, Part 1 of which has just been printed. They will show to those who have not visited these establishments that the buildings are of very modest type and that no funds are absorbed in architec-

tails and which will allow better opportunity for the exercise of his manifest talent and rich art of expression. In his untiring efforts for the success of the stations he has laid a good foundation for many specialists in agricultural science to build upon.

The scenes include the foreman's cottage at the Amador station, now the home of Mr. J. H. Barber, the able incumbent of that position. It is a modest foothill dwelling, such as owners of small farms in the bland climate of the foothills find comfortable. On the right



The Pump House and Workshop at the Amador Substation.



Olive Trees on the Walled-up Terrace at the Amador Substation.

tural display. We make this reference to the work of the stations not alone to indicate their character, but to note the fact that Mr. Charles H. Shinn, who has been their executive officer under Director Hilgard since 1890, has withdrawn, leaving a record of most devoted and energetic service. He will engage in work less cumbered by de-

is the station office and seed house, while back of the buildings rises one of the rolling hills from which this belt at the base of the Sierra Nevada takes its name. The edge of cultivated grounds of the station appears in the foreground of the picture.

Another picture is interesting from the point of view of farm mechanics,

and that is the pump house and workshop, which show how ditch water may not only be taught to pump itself to an elevation above the ditch, but furnish power for the farmshop besides. By means of a turbine wheel a pump is worked and saws and grindstones revolved. The outfit of turbine and pump was made in the vicinity by Knight &

Co. of Sutter Creek. Its capacity at full stroke is 10 miner's inches and the turbine is 12 H. P.

Another characteristic foothill view is the olive tree growing upon a terrace—the terraces being upheld by dry stone walls which give place for the rock which would otherwise be an incumbrance. The olive has done well at the Amador station.

In speaking in review of the Amador station, Mr. Shinn says in the report to which we have alluded: This substation is on the frontier, and its observations have been strikingly new. Its first foreman, a skilled collector, sent many of the native plants of the region to European herbariums. Its orchards and vineyards, embracing a very large number of varieties, have scattered scions, buds and cuttings of new and promising sorts among the farmers of Amador and adjacent counties at the rate, in recent years, of from 4000 to 5000 items each season. It has illustrated, year after year, the proper use of fertilizers on the light granite soils of the Sierra foothills; has introduced improved methods of irrigation; has aided to develop the culture of figs, olives, grapes and other fruits in this region; has devoted especial attention to all the more hardy deciduous fruits, introducing many promising new sorts, and has tested an enormous number of cereals, forage crops, grasses and various small cultures.



Foreman's Cottage and Seed House of the Amador Substation of the University of California.

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E. J. WICKSON. Horticultural Editor

San Francisco, July 19, 1902.

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The Week.

It is proving a very warm July and fruit is hastening forward as though to make up for the general lateness of the season. Shipments of fresh fruit overland are reaching large volume and other harvesting operations are rushing. There is still wide call for all kinds of harvest labor, but supplies are appearing from unexpected local sources, and this is a measurable relief, although more could be used. Around the bay and along the coast generally most delightful summer weather prevails, and mourning for the unusual absence of fogs is confined to those who have beans or pasture growths which need the refreshment thereof.

Wheat has been sagging slightly, but that the market will develop any special weakness is not regarded as probable. The depression is mostly speculative. Last week, with the Gates crowd pretending to send Chicago corn to the moon, speculative wheat was a stiff article. This week the boom in corn options went to smash, dragging speculative wheat with it in a small way. In quotable values for spot wheat there has been a nominal decline of 25 cents per ton. Only one cargo was cleared from this port the current week, that going to Great Britain. Barley is ruling steady; one ship has been engaged to load this cereal for United Kingdom. Oats are without improvement; last season there were not enough—now there seem to be too many. The local corn market is dragging along in the same listless fashion as for weeks past, just as though Chicago and Gates were not on the map. New hay is meeting with very fair custom, choice selling close to figures lately current on best old. Millstuffs are no cheaper, being in light stock and few hands. Beans are slow, some kinds tending slightly in favor of buyers. Beef and mutton are unchanged. Hogs are higher and have been in active request all the week. Butter is advancing, with firmness mainly on choice to select, although pastry butter is not plentiful. Cheese is ruling steady. Eggs are on the up grade, and strictly choice to select move readily at the advance. Poultry market was moderately firm and active most of the week, but closed quiet and easier. Potatoes are arriving from Salinas section, and offerings from points nearer the city are going at lower figures. Onions have been rather slow sellers this week, but a demand from Australia is in prospect. Fruits and berries of most kinds in season are making a liberal showing. Apricots have ruled fairly steady. Peaches were in increased stock and market weak. Cantaloupes and watermelons dropped. The former are arriving in wholesale fashion from Winters and the latter are

coming in carload lots from Fresno as well as Indio. Dried fruit is in demand—all kinds from apricots to prunes. Buyers are not bidding very high prices yet, but they may become more liberal in their views before the summer ends. Dealers are hunting almonds and walnuts, and at the same time are talking bearish, hoping to be able to buy low. They are a foxy crowd. The hop boom seems to have taken a temporary rest. Dealers probably want to do some more buying. Honey is being more firmly held. Wool of high grade is in good request, but is mostly held above quotable values.

Just as we go to press and too late for full statement in this issue we receive a special consular report through the Pacific Commercial Museum of San Francisco, to the effect that though there is a fair prospect for a crop of Jordan and Valencia almonds, there is practically little hold over and consequently a higher price than last year is looked for. Besides, there is not more than half a crop in the Italian producing districts, and the same is true in the northern French districts, in Sardinia and in Sicily. European dealers hold that "high prices must be expected for some time and no hope of a drop." This agrees closely with previous reports of a European shortage and should be counted upon in local sales of the California product.

A somewhat sensational report is furnished through consular sources that the importation of California dried apricots may be interfered with by the German Government on the following ground: "It is claimed that these apricots, which are imported into Germany in large quantities, are moistened after the drying process in order to increase the weight and render them more soft. This, however, makes them darker, and for this reason they are treated with sulphur, which imparts a lighter color. The German authorities, however, object to this method and the fear is expressed by dealers that unless the California producers abandon the sulphur treatment the importation of such dried apricots will be prohibited." The entry of such apricots ought to be prohibited. It is a resurrection process of dried fruit which ought not to prevail. Such treatment and use of sulphur is no legitimate part of California sun drying of apricots, and is reprehensible. We do not believe it is practiced to any extent.

The large dealers in fruit, who are generally also packers, have seemingly settled down, this year, to the policy of letting the fruit come to them, rather than sending out men to reach for it. There has probably not been any formal districting of the State between them in a trade way, yet there seems to be an unspoken understanding approximating such a condition. The spirit of the combine in green fruit shipping seems to be present in other lines of fruit trade, this year, even if not fully materialized. This has a generally bearing down effect on prices of fruit of all kinds, and it is a question nowadays often asked whether the Raisin Growers' Association will be able to get for the product controlled by it a price much above the level of the general sagging. It may, but the question is pertinent. There is a popular saying that prices are controlled by supply and demand. Undoubtedly they are; but the relation of supply and demand which has most to do with controlling the price to the producers is that which temporarily exists at marketing time between themselves and local buyers.

The formation under New Jersey laws of a corporation with from \$30,000,000 to \$100,000,000 capital to buy up California fruit canneries, packing houses, products, and possibly land for orchards, and orchards may or may not prove to be a good thing for this State. Perhaps it may have effects of both kinds. It may become apparent, in the end, that it was a necessary step in that growth of industrial organization the ultimate of which is national industrial organization. California at present has immense undeveloped resources. Money is necessary to develop them. What seems to be equally necessary is resident population.

A practice which is becoming more common in all branches of fruit buying is contracting with raisers for their crop for one or more years. One effect is

to enable buyers to tie the crops up largely, advances of money also operating in the same direction. Another effect is to separate fruit growers into two classes, one of which desires to do business in a more independent way. The result will no doubt be good, in time.

QUERIES AND REPLIES.

Apple Storage.

TO THE EDITOR:—I am interested in fruit culture in this colony and have erected an apple house very much on the lines indicated in Prof. Wickson's book on "California Fruits." There is, however, one matter in connection with the apple house with respect to which I should feel obliged if you could give me a little advice. I desire to know as to what is the best practice in respect to shelves, bins or compartments for holding apples. Perhaps you would kindly tell me the best form in which they should be erected. I may add that I am a regular subscriber to your paper, which I obtain through local booksellers.—J. H. RICHARDSON, Wellington, New Zealand.

Most apples are stored in the ordinary apple boxes (10x11x22 inches inside measurement) holding thirty-five to fifty pounds of fruit according to variety. Scantlings are placed so that the lower boxes are held above the floor so that air may circulate freely, and the boxes are placed upon one another, sometimes to a height of ten tiers. The boxes are usually made with slight openings between the two pieces which form the bottom and sides, and this promotes ventilation through the fruit as well as through the slight spaces between the boxes as they are piled up. It is found that with satisfactory regulation of heat and air as can be promoted by night opening and day closing of the house, and by use of water on the floors when the air is very dry, the fruit can be thus held in boxes for a month or more when it should be picked over and repiled. The use of these boxes makes the handling of the fruit easy in carrying to the sorting bench, etc., and the fact that the fruit is kept in small isolated masses ministers to better keeping than is to be had by the use of bins. If storage in bulk is undertaken it should be in shallow bins or trays not over 10 inches in depth, and these can be placed over one another in shelf form on the sides of the house which should be in some way shaded from direct contact with sunlight. The secret of apple keeping, supposing one has well grown fruit of long keeping varieties to start with, lies in securing cool, fresh air sufficiently moist to prevent shriveling, and in regular picking over to remove defective specimens. Of course since cold storage in the cities has become available at reasonable rates the ranch apple house has become of relatively less moment than formerly.

Japanese Medicine for Morning Glory.

TO THE EDITOR:—One of my countrymen discovered a medicine to extinguish what is known as "Morning Glory." He experimented in Japan and obtained very good results. It will kill the grass to the root within two or three weeks and clear out the grass entirely from the field, and may not harm other vegetation. Has there been similar discovery made and patented and is there any prize to the discoverer of such medicine from the Federal Government?—JAPANESE READER.

No medicine has been discovered here which will kill Morning Glory without injuring the soil so that nothing else will grow upon it for some time. If such a thing could be had it would be of very great value. There is no prize offered for such medicine. It could perhaps be patented, providing its use had not been published, but if it has been generally used for some time in Japan it probably could not be patented as original in this country. The only way to secure attention for such medicine here would be to make a trial of it and in that way demonstrate its value so that all could see it.

The Apricot Crop.

TO THE EDITOR:—Please oblige me with a synopsis of the present apricot crop of this State. Will the crop be large, medium or small, and what will the general quality of the fruit be? I come to you for the information because I believe you can get nearer the true state of affairs than any other source.—READER, Santa Barbara.

All testimony seems to agree in indicating a large crop of apricots this year. Unfortunately, the canners are taking comparatively few and are rigidly

rejecting all but the largest and best. This fastidiousness is believed to be due to the fact that they have quite a large carryover of apricots and will make only a moderate pack this year. The complaint is that much of the fruit is small, resulting from failure to thin out the overburdened trees.

Cracked Apricots.

To THE EDITOR:—Has there been any special investigation into the cause of cracking and roughness in apricots? If so, can you inform me as to what conclusion has been reached? Apricots in this valley have become so badly affected as to seriously imperil the industry, which is a large one, unless something can be done to check it.—READER, San Leandro.

The cause of this occurrence is conjectural as yet and no satisfactory demonstration has been made. Of course you do not refer to the spotting which comes from the shothole fungus, but rather to the occurrence of large and small cracks in the skin and flesh. This cracking seems to be related to the cracking of plums, and the guess is made that conditions of atmospheric moisture have something to do with it, because it occurs in the coast and bay regions and not usually in the drier regions of the interior. Why it should be bad with you this year we cannot tell. In Berkeley apricots seem to have a better skin than usual and we have been disposed to account for this because of the more uniformly warm and dry weather which has prevailed this year and the absence of our usual summer fogs thus far, but why it should be better with us and worse with you this year we cannot tell. It is apparently a physiological phenomenon and not connected with any disease.

Compressed Grasshoppers Suggested.

To THE EDITOR:—We of the Santa Clara valley can sympathize with the farmers of the interior parts who see their crops destroyed by grasshoppers. The reports suggest to me that every summer we stand here before this problem: What to feed our chickens beside grain. Some succeed in furnishing greens, but hardly any in supplying meat or other animal food. Sometimes I buy compressed meat or cracklings, but lately in the market these have reached 4 cents a pound and very, very poor. I should like to know if those grasshoppers could not be dried in the sun, sacked and compressed, and offered for chicken feed. I think if people try them for their hens they will find them just the thing. Let us hear from other poultry keepers.—ARN. Mos, Jr., San Jose.

The suggestion is a timely one, but we fear there are several strong objections to it. In the first place there is no supply of hoppers which could be cheaply secured. They are fortunately only abundant in spots, and even if abundant it would require some gathering and killing before putting in the sun to dry, and this would be expensive. It could, of course, be done cheaply by machinery, but no one could afford to secure a plant of crushers or roasters for such an uncertain crop as grasshoppers fortunately are. It would hardly be possible, even under the best conditions, to put up dry pressed grasshoppers at 4 cents per pound. Again, simply dried pressed grasshoppers might not be wholesome. The shanks play havoc with chickens' crops sometimes; and it would be necessary to grind up the dried hoppers as the Indians do. This would be additional cost. On the whole we cannot see any chance in the enterprise proposed.

Kainit for Sweet Potatoes.

To THE EDITOR:—We have heard that kennett is good for sweet potatoes and we wish to experiment with it. Please put us on about it and where it can be obtained.—READER, Butte county.

Our correspondent's phonetic conception of the word kainit nearly baffled us. Kainit is a potash salt which was formerly largely used but has been displaced by the sulphate and muriate of potash, which are free from some objectional substances which occur in kainit and which are an obstacle to the proper development of the potato. You can find out all about these potash fertilizers by corresponding with the German Kali Works, New York City, or their local agents, Meyer, Wilson & Co., San Francisco.

A Fig Tree for Waste Water.

To THE EDITOR:—Living as I do in a part of town which sewers to cesspools it occurred to me that a black fig tree planted in the vicinity would use up as much of the seepage water as anything that I knew of. But I want to know whether you can suggest

any tree, fruit or shade, that will take up more water, and whether the fig tree, which I prefer, will tend to send its roots into the sewer pipes and break up the brickwork or the cesspool.—SUBSCRIBER, Sacramento.

We should consider a fig tree particularly desirable for the purposes you state. It will use up a vast amount of surplus moisture during the summer season, and will shed its leaves so that you may have the advantage of sun-drying of the ground during the rainy season. We know of no experimental demonstration of how the fig compares with other trees in reference to entering the brickwork of sewer pipes. Judging from the character of its wood and root we should think it would be much less aggressive than the eucalyptus and some other trees. The best black fig for this purpose would be the California Mission fig. It is a great success in the California valleys, a free grower and makes a very large, handsome tree. You can get this variety from any nurseryman.

Cannery Wastes for Hogs.

To THE EDITOR:—We have several hundred head of hogs on our ranch. The cannery wishes me to take their refuse, which I understand consists principally of peelings. As the hogs are feeding on barley and stubble we thought it might make variety for them and be worth the hauling, some 4 miles, in case there was no more risk of cholera from using the refuse. Will you advise me about it?—READER, Sacramento valley.

It may be said that the use of cannery wastes would be wholesome for hogs, although perhaps it would not be wise to use it in excess at first. After a day or two the animals will eat it regularly in connection with dry feed and be benefited by it. It may be estimated to be worth from \$2 to \$2.50 per ton, estimating it by the value of the nutrients contained. From this estimate you may judge as to whether it is worth hauling or not.

White Masculine Apricot.

To THE EDITOR:—Please tell us the name of the small white apricot we send and state its value.—SUBSCRIBER, San Fernando.

The apricot which you send for identification is the White Masculine, sometimes called the "white apricot," or Apricot blanc. This variety is but little grown in this State, on account of its small size, but may have desirability for preserving, or as a pretty table fruit, on account of its white flesh and white skin, delicately tinted with red. It is quite early in ripening, and for certain uses may be found profitable in small amounts, although it is not suitable for the main purposes to which apricots are devoted.

Underground Barriers for Rodents.

To THE EDITOR:—Will you please inform me in your paper how deep it is necessary to build a fence underground to prevent gophers and squirrels from digging under into an alfalfa patch? Which would be preferable—redwood boards or galvanized wire for this fence? What is the largest size mesh used for this fence?—H. T. PENNIMAN, Contra Costa county.

The statements of scientific investigators is that the main runways of the gopher are from 8 to 20 inches below the surface. In ordinary horticultural calculations the depth is put at about 12 inches, and subterranean barriers are not put lower than that. Good redwood boards of that width are more durable than wire screen, but at the same time the wire is cheaper and lighter to transport. One-inch mesh would be best.

Ground squirrels burrow to a greater depth, but their runs are not continuous; they go to a nesting place, though it is said they sometimes go down to water, so as to have a well handy. They might go down one side of a fence and have another outlet on the other side; but such an arrangement is not common, nor do they make up-shoots from the main run, as a gopher does to reach a desired point. It is not, however, practical to exclude squirrels by underground barriers. They can climb fences and establish themselves anew on the better side.

California Citron Product.

To THE EDITOR:—Where is citron made, and can you give the address of a manufacturer?—F. L. W. MACDONALD, Santa Cruz.

Several citrus growers in southern California have been giving attention to this product for years and have manifested much interest and enterprise. We believe, however, that the one who has pushed this

matter furthest is Dr. Westlake of Duarte, Los Angeles county, who has in the foothills of Duarte twenty acres planted to Corsica citron. He has been very successful in curing the peel for the market. The trees are only three years old, and the gross crop during the past season was 25,000 pounds. Of this, 17,000 pounds were cured, and he is said to have refused 15c per pound for it. The fruit was packed in December. This is the largest orchard of Corsica citron in the United States.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 14, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm, clear weather has prevailed during the week, with light northerly winds. Harvesting and threshing are progressing, though rather slowly on account of scarcity of labor. Wheat and barley are yielding fully up to expectations and the grain is of superior quality. Fires have caused considerable damage to grain and hay. The hay crop is heavy and is now being baled and stored. Fruit picking and drying are progressing as rapidly as possible, but orchardists are unable to secure sufficient help to handle the heavy crop, and there will be some loss on this account. Early grapes are ripening and will soon be in market. Prospects are good for a large yield. Almonds, olives and citrus fruits are in good condition.

COAST AND BAY SECTIONS.

The weather has been warmer than during preceding week, and very favorable for crops and farm work. Grain harvest continues and threshing has commenced. The yield of wheat and barley is above the average in the central and northern districts, but light in the south. Grain is generally excellent in quality. Hay baling is progressing and the crop is above the average in some sections. Hops, corn and potatoes are making good growth and give promise of heavy crops. Grapes are in excellent condition and a large crop is probable. Fruit picking, canning and drying are progressing, but orchardists are unable to obtain sufficient help to handle the crop expeditiously. The yield of nearly all varieties of deciduous fruits will be large and in some cases above the average. Citrus fruits are in good condition.

SAN JOAQUIN VALLEY.

The weather has been warm and dry during the week and all crops have matured rapidly. Grain harvest is nearly completed in some sections and threshing is in progress. Wheat and barley are yielding excellent crops in the central and northern districts, but in the southern counties the yield is very light and in some places the crop is a failure. Grasshoppers are disappearing and have not caused material damage to crops except in a few places. The hay crop is very good and is being rapidly baled and shipped. Corn is in good condition. Pasturage is fair in nearly all sections. Vineyards continue in excellent condition and reports from all sections indicate that the grape crop will be above the average. Nearly all deciduous fruits are yielding bountifully. Citrus fruits are thrifty.

SOUTHERN CALIFORNIA.

Warm, clear weather during the week has been very beneficial to deciduous fruits and vineyards. Apricots are ripening rapidly and drying is progressing. The yield is light but quality good. Peaches are looking well. Some sections report that the yield of deciduous fruits will be the best for several years. Vineyards are in excellent condition and prospects are good for an unusually large crop of grapes. Citrus fruits and walnuts continue thrifty. A recent sand storm, accompanied by extreme heat, caused considerable damage to the melon crop at Coachilla. Grain harvesting and hay baling are nearly completed. The potato crop will be short but of good quality. Beets, beans and corn are doing well.

EUREKA SUMMARY.—Crops continue making good growth. Haying is progressing—completed in some places. Harvesting late; oats and barley very promising. A few apples dropping. Prunes are doing well.

LOS ANGELES SUMMARY.—Apricots are ripening and weather favorable for drying. There is some complaint that oranges are falling worse than usual this season.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 16, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.00	.22	.01	.05	66	48
Red Bluff.....	.00	.60	.00	.01	102	58
Sacramento.....	.00	.00	.00	.00	94	54
San Francisco.....	.00	.00	.00	.00	76	48
Fresno.....	.00	.00	.00	.00	104	54
Independence.....	.00	.00	.00	.00	96	62
San Luis Obispo.....	.00	.00	.00	.00	92	48
Los Angeles.....	.00	.00	.00	.00	92	54
San Diego.....	.00	.04	.00	.00	74	56
Yuma.....	.10	.10	.00	.10	110	68

HORTICULTURE.

What to Grow for the Use of Canneries.

By J. M. FRANCIS, a Director of the Central California Canneries, in the Sacramento Bee.

What to plant is a difficult question to answer. The standards are well established, but localities must ever be a potent factor in the matter, and this article must necessarily deal with general ideas.

There are about fifteen varieties of fruits generally canned in our State. The range of the staples, however, is limited to the following in the order of their importance: Cling peaches, free peaches, Bartlett pears and apricots. These four make up fully 85% of the total pack, and the average grower, especially the beginner, should not go beyond this list.

Cling peaches lead and command better prices than frees; besides, they stand rougher usage between the orchard and the cannery.

Frees are a close second. As a matter of fact, a good free, carefully handled and promptly delivered to the cannery, is as profitable as a cling.

VARIETIES OF CLINGS.—Opinions may vary as to what holds second place; the Philips stand unapproachable as first choice, and unless another variety is produced having its color, shape, keeping qualities and averaging larger size, it will hold this supreme position.

Its great points of superiority are: Absence of either red or pulp at the pit, a beautiful pale yellow flesh, smooth, small pit, a good bearer in most places and great keeping qualities after picking, and also hanging well on the tree after it is ripe.

If the trees have been properly thinned, this peach will make a greater proportion of "extras" and "extra standards" than any fruit canned. It should never be planted for shipment green; its lack of color renders it worthless for that purpose, though this very thing makes it the best canner.

The Golden cling need not be discussed; it takes an expert to tell it from the Philips.

The Sellers cling is probably the next best; a shy bearer in most places; it is not largely planted.

I shall give the next place to the Tuscan, though many will claim it for the Levi. Both are excellent peaches—good bearers and splendid carriers.

The Tuscan has the advantage in that it comes in when canners have ample time to take care of it. Being the first cling on the market, it has the whole field to itself, and it is also a most excellent shipper green to the East. Unless heavily thinned, it will run small.

The Levi is a good peach, and most extensively grown in Placer county. It is a good canner and a good shipper green, and, even with indifferent thinning, will run large to very large. It comes a little late in the season and interferes a little with the canning of tomatoes. It is a very heavy bearer; in 1898, when fruit crops were a comparative failure, it had the largest crop for years, and sold at point of production at from \$60 to \$75 per ton; even the past season it sold up to \$45 per ton.

True, Placer has this advantage: While other sections of the State have a partial loss of crops from spring frosts once in a few years, Placer has always a full crop.

The Levi is known as the Henrietta in the Santa Clara section, the Salway cling on the Sacramento river and by various other names in other localities, and, while Placer seems peculiarly adapted to it, I have handled as good a lot grown within the limits of Sacramento as I have ever seen.

The Tuscany (not the Tuscan) is a candidate for popular favor and is well spoken of. It has been propagated in one of the United States experimental stations in this State. I have never seen it fruited, but would advise would-be orchardists to look it up. It matures a little after the Philips.

The Orange cling in some localities, especially the Sacramento river, is an excellent peach; but in many localities it is a shy bearer, and no shy bearer should ever be planted. It comes, too, when the Bartlett pears are on, and this is much against it.

The California, McDevitt, Chili and numerous other clings are only sub-varieties of the Orange and are not in demand for canning.

Of white clings the only one usually canned is the Heath, and its days seem numbered.

THE FREESTONE PEACHES.—Of the freestones, the Muir leads. It makes an excellent canner, is a most prolific bearer and is the drying peach. Unless carefully thinned, it will run small.

The Lovel is another great canner, preferred even to the Muir by many canners.

Another candidate for favors is the Elberta, quite generally planted in Placer for shipment green to the East. The prices it has always commanded for this purpose have precluded its purchase by the canners. It has been tried, however, and pronounced a good canner. It comes to us from Georgia; but it grows half as large again. It resembles the Muir in shape and is 25% larger. Unless planted on high, well drained ground, it may be affected with curl leaf, and while this can be prevented with the Bordeaux

mixture, it is best not to plant it on low ground. It is a splendid drier, too.

All the Crawfords are good, but in many sections they do not ripen evenly; one side of a specimen will be soft, the other side green, and for this reason they are hard to handle. Where Muirs, Lovels and Elbertas can be had, the Crawfords will be sent to the drying trays.

Then there is the Salway. This is canned quite largely, and will make very good standards, a few extra standards, but very poor extras. It is, I think, the greatest bearer of any—a splendid keeper; but I would not plant many of them to-day. Canners will only take them when they are short on their pack of frees.

PEARS, APRICOTS AND PLUMS.—There is but one California and there is but one Bartlett pear—the California article. It grows to perfection in all sections of northern and central California. And while for a time, say, three weeks, when the Sacramento river crop is on, it may glut the market, yet it is, and always will be, in great demand for canning and shipping. It is the fruit that will capture the foreign markets; it is known in every large city of Europe now, and will be a staple everywhere before many years. There can never be too many of these; canners will want them always and will pay well for them. In localities where crops are late in maturing, as in the upper Placer section, the Placerville district, the San Joaquin valley, the upper Sacramento river and similar localities, it is the fruit to plant largely. It does not come into profitable bearing as early as the peach, but when the latter is ready for the grub hoe by reason of age, the Bartlett will be at its best, and continue so for years. Besides, it can be planted on any soil, wet or dry. In fact, it is usually planted in any low spot in the orchard, where no other fruit would grow—not even the plum.

Apricots, in localities where they do well and are free from shothole fungus, will ever be a paying fruit. Before planting, however, examine the older orchards carefully, and, if satisfied on this point, ascertain the variety that does best and plant it. Whether for canning, drying or shipping green, they are a staple.

Plums: A limited quantity is canned every season. Green Gage, Gold Drop, Egg and Washington are those generally used.

Cherries: Few blacks are now canned and none will be wanted in a very few years. The Royal Annes are the only ones to plant.

CHOICE OF LOCATION.—In planting an orchard, distance from lines of transportation must be carefully considered. Better pay a few dollars more for the land than forever to pay it for teams to haul your fruit, and quite frequently you may not get these just when wanted.

Good roads are wanted by all; they are a prime necessity to the fruit grower. Every effort should be used to make them so. We should not expect the county to do it all; the State is too large for the population, as yet, though we are doing very well in this line. Frequently in all good roads there are a few bad places that can be made good with little labor; get the neighborhood to fix them, it will pay you every time.

Fruit should never be hauled to market on a dead-axle wagon. This bruises it, and, while bruises may not show at once, the canner will find them on peeling. This applies more especially to pears, as they must remain at the cannery several days for ripening; a bruised pear never ripens—it rots.

CHOICE OF VARIETIES.—For a 25-acre orchard the following are the best varieties, present and future: In acres, four Tuscan, five Philips, three Levis, three Muirs, three Elbertas, two Lovels and five Bartlett pears. In localities where fruit matures late, as mentioned elsewhere, the Levis should be omitted, the Tuscan reduced and the additional acreage planted to Bartletts.

Prices paid last season were, per ton: Cherries: Royal Annes, \$100@110; blacks and common whites, \$50@60. Bartlett pears, \$20@35; free peaches, \$20@22.50; Summer clings, \$22.50@27.50; Philips, \$30@35; Levis, in Placer, where the canners left their money and their wits, up to \$45.

Usual prevailing prices are: Bartlett pears, \$20@22.50; free peaches, \$17.50@22.50; Summer clings, \$20; Levis, \$25@27.50; Philips, \$25@30.

These figures will, probably, rule for years. There are a number of contracts between growers and canners at these figures, running for a few years, while in years of comparative scarcity, as in 1898, very much higher prices will be paid.

Blackberries, especially when grown near a cannery, will always be a paying product. They are worth from \$35 to \$45 per ton.

A WORD OF CAUTION.—Beginners should stick to well-known standard varieties of fruit, and let those who can afford it try the newer introductions. Very often their great qualities, as claimed by the originators or discoverers, fail to materialize, and the result is a loss of crops for a number of years. They also should never plant more than they can easily take care of; thirty to forty acres is a big orchard. Quality and not quantity will pay.

Twenty-five acres planted to varieties of fruits named above and properly cared for, almost anywhere in central and northern California, the counties

in the extreme north and northwest excepted, due to lack of transportation facilities in some and climatic conditions in others, will prove a better investment than an endowment policy. And, if you are taken away, your family will have a better thing than an insurance on your life.

We do not understand the two peaches, one called "Golden" and the other "Sellers." "Seller's Golden Cling" is the full name of the peach known to us as a fine cling for canning. The Tuskenia is the proper name of the early yellow cling which the writer calls Tuscan. The later variety is the Tuscany. Mr. Francis' communication of the results of his long experience is very valuable to growers.

Small Fruit Growing in the Florin District.

By MR. G. COX of Florin in the Sacramento Bee.

The land best adapted to the successful cultivation of the strawberry in this district is a reddish loam, very shallow, in many places not more than 2 or 3 feet deep, with a hardpan underlying it from 2 to 6 inches thick, and impervious to water. This hardpan somewhat resembles pipe clay, and is even richer in plant food than the soil itself. It readily disintegrates on exposure to the air, though, if not disturbed, it holds above it all the moisture received from rainfall or irrigation. This shallow soil is much better suited to berry culture than a deeper soil, as the results attest. Below the hardpan referred to is a moist sand, and a plentiful supply of water for irrigation may be had at a depth of 6 to 20 feet, and raised to the surface by means of bored wells, pumps and windmills.

It is an undisputed fact that this land offers for berry culture better advantages than any other soil.

The enormous yield of strawberries per acre in this district, which has never been equaled in any other part of the world, is of itself corroboration of all that has been written of this region as the ideal berry land of Sacramento county.

STRAWBERRIES.—The strawberry receives more attention than any other of the numerous small fruits that are at home in this soil. In fact, the cultivation of such berries as the Loganberry, raspberry, blackberry and dewberry, all of which are remarkably prolific and are all-around money makers, is but a side issue compared with the strawberry industry. As to quantity and quality of this "watery delusion," this district stands to-day in the front rank as the greatest strawberry producing region in the known world.

Of the twenty odd varieties successfully grown here, only four have a commercial distinction, namely, the Dollar berry, Jessie, Marshall and Triumph. The Triumph (Triomphe de Gande), brought to the United States from Belgium, was the stand-by for over twenty years. It is now being superseded by the Dollar berry and Marshall, both of which are prolific, of fine quality and good shippers. The Jessie berry is the greatest producer, but its softness makes it a poor shipper for long distances. This variety was introduced here from Wisconsin in 1886 by Thomas Taylor. In 1897 Mr. Taylor exhibited samples of this variety, some of which measured 5½ inches in circumference. Seven tons to the acre is not an unusual yield for the Jessie. To the credit of this variety as a money maker I wish to add that Mr. Taylor made a specialty of this berry, and by strict attention to its requirements and cultivation he has accumulated a small fortune. He retired from the business some two years ago and now lives in Oak Park, this county, where, no doubt, he will be glad to give pointers on "how to raise strawberries."

THE PRODUCT.—In 1893 the output was 8000 cases—60 tons. Last year—1901—with 335½ acres in bearing, the output was over 112,000 cases, 840 tons, an increase of 1300% in nine years. It will be noted that the average per acre was 334 cases. This, however, does not give a correct average for two to four year old plants, from the fact that of the 335½ acres 107½ acres were planted during the early part of 1900. It is safe to place the average from the older plants at 445 cases to the acre. All things considered, this is a conservative figure. There are numerous instances, some of which will be found below, where the yield has gone beyond the 600 mark. A yield of 450 to 550 cases to the acre is by no means unusual.

During the early part of 1901 180 acres of new plants were set out. This, less the 25 acres of old patches plowed up, will make a total of 490 acres of bearing plants for this year—1902.

During a period between September, 1901, and May, 1902, 518 acres of new plants have been set out. This makes a total acreage, old and new plants, of 1008 acres. Judging the future by the past, our output this year will exceed 150,000 cases. And when the year 1903 rolls around we may expect an output of 2800 tons—over 370,000 cases.

NEW MARKETS.—It has been the policy of the shippers to reach out for new markets every year, and consequently the supply has never yet exceeded the

demand. This has been the experience of the past, and it will, to a mathematical certainty, be the experience of the future. In other words, if all the land in this district should be planted to strawberries, and every acre produced 500 cases, markets could be found for the output. For the benefit of those who may consider this assertion rather visionary, let us suppose this to be done—that is, the whole 16 square miles becomes a strawberry patch—and an order should be sent to Florin to send one crate of strawberries to every man, woman and child in Oregon, Montana, Washington, Colorado, Utah, Nevada, Texas and California. Well, we would fall short just 1,180,000 crates of filling the demand. Our output of 1901 would fall short over 47,000 tons of filling the order.

Again, supposing this order to apply to the State of California, we would fall short nearly 12,000 tons. In fact, the entire output of this section for the past five years would not fill the order within 10,000 tons.

The writer hopes these figures will have a soothing effect on the silurians who are ever and always prophesying an overproduction of the "watery delusion" in this harmonious settlement.

The following ament the yield per acre of strawberries in this region will give the reader an idea of the productiveness of the soil, and also assist in demonstrating the fact that the cultivation of fruits, especially small fruits, is more profitable than wheat growing, notwithstanding it seems to be an arduous undertaking to impress this truth upon the average farmer.

I beg to state that in gathering the following statistics no attempt has been made to mislead or give any figures that cannot be verified.

ACTUAL YIELDS—SEASON OF 1895: William Macey sold from 2½ acres 961 cases, an average of 432 crates to the acre. The berries netted him \$660.36. From the same patch in 1896 Mr. Macey harvested 1050 cases, which netted him \$829.50. Average number of crates per acre, 495.

George Taylor, South Florin, sold from ¼ acre of Jessie strawberries 332 crates, which brought \$330, a net profit of \$220.

W. R. Taylor in the season of 1899 harvested 21 tons of Jessie strawberries from 6 acres of land. The gross sales were \$2870, net profit over \$1900. This was an average of 466 crates to the acre.

L. C. Steward of Florin in one year sold from 100 rows of plants (½ acre) \$900 worth of strawberries, at a net profit of \$650.

SEASON OF 1901: K. Nakimota harvested 4500 crates from 10 acres. Average per acre, 450 crates. Net profit, \$2650.

C. May & Bro. picked from 20 acres 16,700 crates. Average per acre, 835 crates. Net profit not given. [Note—First crop of Jessies averaged 1000 crates to the acre—7½ tons.]

C. Terada from 6 acres grossed 4500 crates. Average per acre, 750 crates. Net profit not given.

Robert Barmby, now retired, picked from 5 acres 2900 crates of strawberries. This patch was rented on equal shares to a Japanese. Mr. Barmby received for his half, after paying for all the crates and baskets, \$1026. He now lives at No. 3219 Magnolia avenue, Oak Park, in this county, and I have a letter from him certifying to these facts.

THE FIELD.

Asparagus Growing for Canneries.

This wonderfully increasing product of California lowlands is interestingly sketched in the Sacramento Bee: The production of asparagus in northern California has reached a height of perfection unsurpassed anywhere in the world. On the Sacramento and San Joaquin rivers are five canneries which pack the tender vegetable. Three are in Sacramento county—one at Sacramento City, one at Trasks Landing and one on Grand island. On Bouldin island, at the junction of the Mokelumne and San Joaquin rivers, just south of the Sacramento county line, there are also two large canneries which pack asparagus. There is still another at Milpitas, on San Francisco bay, in Santa Clara county. The canneries at Trasks, Grand island, Milpitas and Bouldin island pack asparagus exclusively.

To get the best results the canneries have to be established in the neighborhood of the asparagus beds, because in a few hours after cutting the asparagus becomes tough. The entire asparagus stalk, if cooked within a few hours after cutting, is tender, while if kept longer, only the tip itself is tender enough to eat. This is the reason why asparagus properly canned is all edible, while of market asparagus, as a rule, only the tips can be used.

The "grass" is cut for the canneries just as it indicates its presence by raising the earth. The knife is run down below the surface of the ground, and it is then cut, perfectly white in color. It is processed within two hours after being cut. There is quite a difference in results between "grass" processed two hours after it is cut and that which is processed in from thirty-six to forty-eight hours, so far as tender-

ness, flavor and color are concerned. Light turns the shoots green. The canning process is very simple, and nothing is used to make the product keep; simply cooking in salt and water and excluding the air.

The plant is very sensitive to conditions of climate, soil, etc., and to get the best results in packing a combination of favorable circumstances is requisite. The peaty soils of certain river islands have been found especially well adapted to this culture. The finest asparagus shown at the recent Buffalo Exposition was grown and packed on our river lands.

Of late there has been much planting of asparagus on islands in the delta of the Sacramento and San Joaquin rivers, where the soil conditions are especially favorable. W. H. Metson and his associates, who have about 300 acres planted on Grand island, in bearing, have also set out about 500 acres more on Andrus island, where they will build a cannery. They now own the cannery on Grand island. Their company is known as the Golden State Asparagus Canning Company.

Three years are required from the time of setting out the roots before the beds are in proper condition for cutting, though sometimes shoots are cut the second year. The edible shoots begin to appear in January, and the early shipments bring high prices. In March the season for canning opens, the asparagus being then abundant. This season Sacramento shippers were unable to get enough to fill orders. The average prices paid by canners run from \$50 to \$60 a ton.

On Bouldin island there are 1200 acres of asparagus in bearing, all of which is suitable for canning, and 500 acres of new planting. On Andrus island there are 600 acres, about 50% of which is suitable for canning. On Grand island there are also about 1000 acres, about 65% of which is suitable for canning. On Jersey island, about 200 acres; on Rough and Ready island, about 200 acres; on Twitchell island, about 200; Pearson district, about 1000 acres in bearing. The output of Pearson district last year was about 25,000 cases; Bouldin island, about 110,000 cases; Grand island, about 25,000 cases; Sacramento, 25,000 cases; Milpitas, 30,000 cases.

The canneries packing asparagus employ about 1000 to 1500 men during the season, and several times that number of men are employed in cutting the "grass."

The two canneries on Bouldin island, owned by the Hickmott Asparagus Canning Company, are each 100x375 feet, the largest in the world devoted exclusively to asparagus. During the height of the season, which lasts about 100 days, they employ upwards of 500 hands, and more than 1000 find work in the asparagus fields. The island comprises about 6500 acres, of which the company owns half, and it controls the remainder.

The canning of asparagus on the Pacific coast was originated in the city of Sacramento about twenty years ago by Robert Hickmott, in the cannery of the Capital Packing Company. Others engaged in the business from time to time, and much inferior stuff was put up, so that the reputation of California asparagus suffered, and for a number of years it was under a cloud. The first of the two canneries on Bouldin island was established in 1892. Since that time the reputation of California asparagus has become very good in all parts of the world. Even in Germany, where the asparagus packers have long led the trade, the best California brands are acknowledged to be of the highest quality. The Hickmott Company has more orders than it can fill, and its pack of the present season was sold in advance of the crop. The pack may run as high as 120,000 cases. In the height of the season the company puts up 72,000 cans of asparagus a day. Within two or three years the company's pack will be about 200,000 cases per annum.

P. C. Drescher, of this city, one of the owners of the Bouldin island canneries, says there are good opportunities for families to rent lands there, and elsewhere on the river lands, on favorable terms, to engage in growing asparagus or other vegetables. His company and other land owners desire to encourage new settlers, and will give all reasonable accommodation in the way of terms to desirable persons.

Asparagus culture requires a great deal of labor, particularly during certain months of the year. It is estimated that one person per acre is needed to cut the crop during the canning season. In view of the outlook for the growth and expansion of the business, the prospect is very favorable for newcomers to get a start on the river lands, where there are likewise many other avenues for employment, in fruit and vegetable growing, affording plenty of work the year round.

The California Fruit Canners' Association owns and operates the asparagus canneries at Sacramento, Pearson reclamation district and Milpitas. While the majority of people prefer the asparagus grown on the river bottom lands, there are many who prefer that grown on lands contiguous to the bay. Asparagus grown at Milpitas, while not so white as that grown on the bottom lands, has a more pronounced asparagus flavor. At the Pearson reclamation district the California Fruit Canners' Association will pack this season about 40,000 cases of asparagus. When the acreage now in comes into full bearing, there will be packed in this district up-

wards of 100,000 cases per annum. At Milpitas they expect to pack in the neighborhood of 45,000 cases this season, and gradually increase every year up to a maximum of about 75,000 cases.

At Sacramento, where the canning of asparagus in California originated, the California Fruit Canners' Association will probably pack this season 40,000 cases. The pack in this location will not materially increase in the future.

In the aggregate, the California Fruit Canners' Association will pack during the season of 1902 about 125,000 cases, and double that amount inside of three years.

The Napa Thistle.

TO THE EDITOR:—While Napa county justly boasts of many products of her fertile soil, she strenuously disclaims all credit of originating the so-called Napa thistle. This name, from some unaccountable cause, has attached itself to a very noxious weed, one of the very worst that ever found a home in California soil.

Where it has obtained foothold it regularly appears in the late summer and early fall months, a vigorous-growing thistle. It rapidly spreads along highways and in stubble fields if radical means are not used to destroy it. Soon after the grain has been harvested its deep-green stems, thickly covered with long, hard, sharp thorns, appear in the stubble, and if left undisturbed will spread over the entire field.

Stock of all kinds abhor its presence, as its hard thorns prevent cattle, horses and even sheep from foraging wherever it grows.

It made its appearance in the vicinity of Napa about ten years ago, brought here, it is supposed, in baled hay or straw imported from some distant locality. But Napa disowns title to the unwelcome weed. The botanists of the State University say of the plant: "The weed is the *Centaurea solstitialis* of southern Europe, known under the name of St. Barnabas' thistle, prickly tarweed, or yellow-flowered centaury. *Centaurea solstitialis* is recorded in the report on the botany of the State Geological Survey, published in 1880, to have been found in the fields at Oakland and also in San Diego. In 1887 it was collected at Vacaville and in 1891 at Bellville, Sonoma county."

The weed might as justly be called the Oakland thistle or the Sonoma thistle as the Napa thistle. Let the name drop and call the weed the tocalote, as do the people of Mexico, whence the pest probably came to California.

Prof. Hilgard in a letter to the writer says: "The weed is the *Centaurea solstitialis*, one of two closely related species, called tocalote by the Mexicans. The other species, *C. melitensis*, is more common than even the other around the bay, and both are equally pestilential weeds, the last-named species especially coming up in overstocked pastures so as to completely displace all useful pasturage, while in orchards and vineyards it will come up and live through the hottest and driest summer, sprawling on the ground and seeding freely, if the upright stems are cut.

"Fortunately the wind does not disseminate the seeds, so that the weed is comparatively easy to get rid of. Being an annual, it need only be destroyed persistently wherever it shows itself for one or sometimes two seasons before bloom, to be completely extirpated. But it must be watched throughout the summer, for little plants will come out of the cracks of the adobe as late as August, and seed abundantly without being really noticed.

"Mowing the weed does no good whatever. If kept cut, it becomes perennial and will manage to mature seed somehow. It must be chopped up or cut below the root crown by weed cutter, duckfoot cutter, or hoe."

Concerted action should be taken to eradicate this pest, especially in any locality where it has only recently appeared, for the reason that in such places it can easily be destroyed. Once it gets a foothold it is an endless task to get rid of it. The writer a few years ago found one of these thistles growing in rich adobe land. It had nearly attained maturity. By careful counting it was found that this plant, the product of a single tiny seed, bore 300 blossoms, each of which had 60 seeds—18,000 seeds on a single plant. Another of these thistles had grown to be 8 feet in circumference, 2 feet high, with a tap root 1 foot long. At the least calculation this plant had 2000 seeds.

A. WARREN ROBINSON.

Napa.

THE IRRIGATOR.

Irrigation Methods in Arizona.

NUMBER III.—CONCLUDED.

From Bulletin No. 41 of the Arizona Experiment Station, by A. J. McCLATCHIE, Agriculturist and Horticulturist.

POTATOES.—At least half of the water necessary to produce a spring crop of potatoes may be stored in the soil before the field is planted. If two-thirds to 1 foot of water—the amount necessary depending on the condition of the soil—be applied, and the soil plowed deeply and well harrowed just before plant-

ing, potatoes may be planted here during winter in just the same manner as they are in regions where they are not irrigated, the field harrowed level, and no further attention be given them for about two months. If weeds appear, or if rain occurs, however, it is best to harrow the field once or more during these two months.

The best time to plant in this region is usually early February, and the plants should appear about a month later. If the soil has been put into proper condition previous to planting, potatoes will usually produce a better crop if not irrigated until early in April. For irrigation, make furrows midway between the rows, which should be 30 to 36 inches apart, with a good-sized shovel plow. Turn a small stream of water down each furrow and permit it to run four to eight hours, the time depending upon the character of the soil. The application of about 0.4 of a foot of water at each irrigation is advisable. As soon as the soil is sufficiently dry, which will be in two to three days, the field should be thoroughly cultivated. During the remainder of April and during May the crop will commonly need either one or two more irrigations. After giving the last irrigation, instead of using a cultivator, when the soil is sufficiently dry, the shovel plow used for furrowing may be run into the furrows and the soil thus thrown about the plants.

If planted during August for a fall crop, instead of harrowing the field level after planting, as is done in the winter, the furrows made in covering the potatoes need to be left for the first irrigation, which must usually occur soon after planting. The subsequent treatment is the same as of winter-planted potatoes, except that the crop will need more frequent irrigation. But, usually, though irrigated freely, a satisfactory crop can not be secured at this season.

The winter-planted crop of potatoes, since it makes most of its growth during cool weather, is produced with a comparatively small amount of water—less than in some cooler regions where potatoes are necessarily grown during the summer. A total of 1.5 to 2 feet of water is ample to produce a good crop in most soils. The tendency with many growers is to apply too much water and to give too little cultivation. The amount of water mentioned above, with proper cultivation, will produce a better crop than double the amount without cultivation. Too early irrigation tends to cause too rank a growth of tops, without the formation of as many tubers as if the plants were not irrigated. It is better to permit the potatoes to continue growing in the mellow soil in which they were planted, as long as they are growing thriftily, than to compact the soil by too early or too excessive irrigation. The less water the crop can be grown with and the more thoroughly it is cultivated, the better will the quality of the tubers be.

The potatoes planted Jan. 9, 1901, gave a lower yield than those planted Feb. 1. This was due to the frequent frosts that occurred during March. Those planted earlier where larger when the frosts came, and, consequently, sustained more injury than those planted later. On the other hand, those planted the latter part of February did not have sufficient time to make a full growth before the warm weather of May, and consequently did not give so large a growth as those from either of the other two plants. Judging from the experience of the past four years, during average years a larger yield from a given amount of water applied may be expected from potatoes planted during early February. During mild winters a heavier yield may be secured from potatoes planted about the middle of January; but during no year, according to our experience, is it wise to postpone planting much after early February, if a full return from the water applied is to be expected. The two objects to be kept in mind are the avoidance of the March frosts and the securing of the principal growth of the crop before the heat of May. The attainment of these two objects is not always easy. If planted too early or covered too lightly, they are apt to be injured by frosts in March. On the other hand, if they are planted so late or covered so deeply that they are not nearly full grown by May, they will not produce a satisfactory crop, no matter how much water be applied to them.

PUMPKINS AND SQUASHES.—Pumpkins, squashes and cucumbers are irrigated in the same manner as melons. Furrows are made 4 to 8 feet apart, water run through them and the seed planted along one side when the soil is sufficiently dry.

The only squashes cultivated generally in this region are the early bush varieties. These are planted in February and March and produce their crops before the heat of summer. The common winter squashes grown so extensively in the north are grown very little here, as they do not endure well the heat of our summers, no matter how much water is applied to their roots. Instead of these squashes is grown the Cashaw pumpkin, which does well here and keeps well through the winter. For winter use it is planted during June, and from the time of planting until fall needs frequent irrigation.

Cucumbers are planted at about the same distance and irrigated in about the same manner as muskmelons. They are planted during February and March, and from that time on need frequent irrigation. They do not usually produce many pickles after the heat of June. For a fall crop they may be planted

during June and July, in which case they will need frequent irrigation.

SORGHUM.—The seed of sorghum is sown in the bottom of furrows during May, June and July, a light covering of earth thrown upon the seed by dragging a bush through the furrows or by turning a light furrow with a plow, and water run through the furrows soon after planting. Some growers leave these furrows permanently and run water through them every ten to fifteen days. The better way usually, however, is to cultivate up the furrows after each of the early irrigations and make fresh ones for each subsequent irrigation. After the sorghum has reached such a size that it is not convenient to furrow it, the furrows may be left for the later irrigations. By this time the sorghum will shade the furrows and they will not become hard and baked, as they will before the crop covers the ground. As this crop is grown entirely during the warm weather of summer, considerable water is required to produce it; but, on account of its excellent system of roots, not as much water is needed as might be expected.

STRAWBERRIES.—Strawberries are irrigated in this region almost entirely through permanent furrows. The furrows are either left open at each end or they are connected at alternate ends, and an endless ditch through the patch thus formed. This method of irrigating through an endless ditch is necessary in small pieces, especially where the ground is sloping. The water is simply turned in at one side of the piece and permitted to make its way, by flowing back and forth, through the entire piece. If the strip across which the furrows extend be long, water is admitted at several places along the side, either at all places at the same time or at the different places successively. If the field be large, especially if it is long and nearly level, strawberries can be irrigated to better advantage through furrows that are open at each end. A small stream should be turned down each furrow and permitted to run long enough to wet the soil about the plants properly. If the streams are small enough, a little water will escape at the lower ends of the furrows.

Whatever the method of subsequent irrigation, the procedure in setting the plants is much the same. Water is run through the furrows, the plants set along the water line a few days afterwards and water again run through the furrows as soon as practicable. In the case of the endless ditch arrangement, the water run through before setting the plants usually fill the furrows about half full; hence, the plants are set about midway between the bottom and the top of the ridges. Along the open furrows the plants are set near or at the edge.

For the first few weeks subsequent to the first irrigation after setting, water should be applied often enough to keep the soil about the roots constantly moist. When the plants have become established, the soil about them does not need to be kept quite so moist, but should never become very dry. The frequency of irrigation necessary will depend upon the nature of the weather. During the cool weather of winter, irrigation twice a month will be sufficient. During March, April and the early part of May irrigation once in eight days will ordinarily be sufficient. From the latter month until October strawberry plants should receive water once in four days. During the remainder of the fall months once in eight to twelve days is sufficient.

The advantage of the endless ditch arrangement is the convenience of irrigation, especially upon uneven ground. The principal disadvantage of the arrangement is the difficulty of cultivation, due to the unevenness of the surface and the usual shortness of the rows. Experiments in the irrigation of this crop are not yet sufficiently extensive at the station farm to determine definitely what the best method is; but the indications are that irrigation through long, shallow furrows is the preferable one.

TOMATOES.—Tomatoes are grown to the best advantage in this region by planting the seed along furrows through which water has been previously run, in the same manner as corn is planted. They may be planted during February or March, and from the time of planting until the plants attain some size need quite frequent irrigation. After the plants have attained a sufficient size to shade the soil about them, they may be irrigated less frequently through furrows that are made farther from the plants than at the start. If the crop is to be maintained throughout the summer for the production of fall fruit, it will need frequent irrigation during the hot weather of July, August and September. After these months the irrigations will need to be less frequent than during the heated season.

VEGETABLES (Small Garden).—Small garden vegetables, such as carrots, lettuce, radishes and spinach, not discussed above, are commonly sown along small furrows, through which water is run immediately after seeding. The seed being small, it is not usually practicable to cover them deeply enough to prevent the soil about them drying out before they germinate. During favorable weather, however, they may be brought up by sowing the seed in well moistened soil, especially radishes and spinach. Carrots are sown in October, November and January; lettuce during September, October, November, January and February; radishes, from September to April, inclusive; spinach, from September to February, inclusive.

From the time of sowing until ready for use they all need frequent irrigation to keep them growing thriftily, and thus produce satisfactory table articles. In all cases the irrigating water should not be permitted to flow over the surface of the soil about the plants. If the seed has been sown along small temporary furrows, the soil should be cultivated or hoed after each irrigation. It is not practicable to cultivate much with a horse, if the seed is sown along the side of the large permanent ridges employed by some growers; but the vegetables can be at least hoed after each irrigation. From May to August, inclusive, the warm dry weather causes it to be impracticable to grow any of the smaller vegetables, no matter how much water is applied to their roots.

THE RANGE.

The Ranges of Northwestern California.

From Bulletin No. 12, Bureau of Plant Industry of the United States Department of Agriculture, by J. BURTT DAVY of the University.

NO. 1.—RANGE DETERIORATION.

THE OLD AND THE NEW.—The same clovers and other annual plants and the same perennial "bunch grasses," which are now but sparingly found, were in former times the common plants of the open range, and that the species now most abundant, including alfalfa and also wild oats, were unknown here before the Spanish occupation of California. The following conclusions, therefore, were accepted:

1. The primitive forage plants were the "bunch grasses" (*Danthonias*, *Stipas*, *Melicas*, *Poas* and perennial *Festucas*), with annual and perennial clovers, pea vines and wild sunflowers; these were much more abundant in former times than now, and on account of their palatableness they largely disappeared with overstocking.

2. With the advent of white settlers and their domestic animals, wild oats and alfalfa (*Erodium cicutarium*) took possession of the country; these increased in relative abundance as the native forage plants became scarce; as the latter diminished in quantity cattle took to eating the former until they in like manner succumbed, while other plants took their places.

3. Small barley grass, squirrel tail, and soft chess were among the next weedy introductions; the two former, when in a maturing condition being disliked by cattle, have a chance to spread and cover the ranges, but cattle having acquired a taste for soft chess, it is being kept in check, if not diminishing, on closely grazed ranges.

4. A third immigration is now taking place, in which musky alfalfa (*Erodium moschatum*), broncho grass (*Bromus maximus gussonii*), barley grass (*Hordeum murinum*, locally called foxtail), tacalote (*Centaurea melitensis*), hawkbit (*Hypochaeris glabra*), bur clover (*Medicago denticulata*), and other weeds are establishing themselves along the roadsides and around ranch houses. Of these, the bur clover, and the musky alfalfa, have some forage value. Barley grass is eaten green the spring before heading out, but afterwards becomes one of the most objectionable weeds for a stock range. The other aliens are destined to cause irreparable injury to the ranges unless kept in check and prevented from becoming firmly established.

PRIMARY CAUSE OF RANGE DETERIORATION.—Range deterioration is traceable to the desire to make as much off the land as possible, coupled with two mistaken ideas: (1) That a range can continue to carry the maximum number of stock without deterioration year after year without any rest; (2) that in order to get the most out of a range in a given period of time it must be stocked to its maximum carrying capacity.

By maximum carrying capacity is meant the highest possible number of stock that the range will turn off in good condition at selling time, without taking into account the condition of the range itself; in other words, it has reference purely to the present crop of stock, without reference to the range or to future production. The optimum carrying capacity, on the other hand, means the highest number that can possibly be carried without injury to the range, providing for the production of future crops, and eventually, therefore, bringing the best results both to range owner and occupier.

On ranges which are not stocked beyond the optimum the animals are not likely to depasture any one spot, and a sufficient number of plants of alfalfa, native clovers, danthonia, and other bunch grasses will thus be left to ripen seed for another season's growth. Having more space over which to roam, the stock will spend less time in one place, doing less injury to the bunch grasses by their trampling. The number of stock which make the difference between the maximum and optimum carrying capacity costs more to the range owner in permanent and irreparable damage to his property than they can bring back in cash value. While every head of stock put upon the range, until the optimum is reached, is equivalent to so much additional profit, every head carried beyond the optimum not only ceases to be a source of profit, in that it limits the supply of nutritious plants both for itself and the rest of the herd, but also causes deterioration to the range.

(TO BE CONTINUED.)

Agricultural Review.

ALAMEDA.

HAY BRINGING GOOD PRICES.—Livermore Herald: The hay crop of the valley will be only a little over half of that of last year in quantity, but that means more than half a crop, as last year's yield was enormous. The quality of this year's hay was never surpassed and will sell well in any market. The local market has been exceedingly good this week, several thousand tons being sold at \$10 a ton, and one lot went at \$10.50. As this price is paid on delivery, without any storage or insurance deductions, it yields a very fair margin of profit to the grower.

BIG CREAMERY COMBINE.—Negotiations that have been under way for several months resulted this week in the University Butter, Milk & Cream Co. acquiring all the butter and milk depots in Alameda. M. Y. Smith, lessee of the Livermore creamery, was one of those to dispose of his interests, including the lease of the local creamery.

BUTTE.

ONE MACHINE TO HARVEST 3000 ACRES.—Chico Record: William Thomas' big steam harvester has been given a complete overhauling preparatory for a long season's run, in the course of which he hopes to break the record. Eight men with this steam harvester will cut, thrash and sack between seventy and eighty acres of wheat or barley in a day. The header cuts a swath 25 feet wide, the header being managed by one man, who raises and lowers the sickle bar according to the height of the grain. One man attends to the thrashing machinery and oils the bearings. Three men are required to fill, sew and dump the sacks. The engineer runs the big traction engine and one man fires it. One other man hauls water and oil, the oil being used for heating the boiler. Mr. Thomas states that during the coming season he expects to harvest at least 3000 acres of grain and possibly 3500. He has harvested in the past a section of land in eight days.

FRESNO.

GRAPE SALE.—A recent telegram says the San Joaquin Wine Association of Fresno has sold the wine grape crop under its control to the California Wine Association for three years. Individual contracts are now being made with the members of the Scandinavian colony at satisfactory prices.

KINGS.

TIME AND SEED GONE.—Hanford Sentinel: John Montgomery, who farms north of Hanford, has been having some experience, reports Geo. Farmer. He soaked enough seed corn to plant twenty acres in a solution of Paris green for the purpose of preventing the worms from eating up the seed. This recipe he read from some supposed authority. He paid \$4 for the Paris green. The result is that he had about twenty hills of corn come up. The balance of the seed failed to grow. The worms did not eat the corn, but the poison seemed to have killed its germinating qualities.

LAKE.

PRICES FOR MOHAIR.—Clear Lake Press: The following is a letter received by Philo Ogden of Upper Lake from the Massachusetts Mohair Plush Co. The price offered Mr. Ogden for mohair is said to be the highest price ever paid: "We have received from you three bales containing 1163 pounds net of mohair, one bale containing 341 pounds net, all good length, white, fine combing mohair. It is very choice. We offer you 50c per pound for this bag. Another bale, containing 315 pounds net, is all good length combing, good bred, in good condition. We offer you 30c per pound for this. The third bale contains 507 pounds net. This is all fine, long combing, good bred and in beautiful condition. We offer you 42c per pound for this. The above prices are for delivery in Lowell."

GOOD FRUIT CROP AND ENOUGH HELP.—Lakeport Bee: F. W. Gibson informs us that while his prune trees are well loaded, the fruit will be nice and large, and the prospect for sufficient help in gathering is very good, judging from the applications. He has the orchard in good shape; and the trees, being well filled, make it easy for pickers. With his new machinery and new buildings, he can turn out a pile of fruit in a short time. The prospect for saving the pears and peaches, as well as the prunes, is good, although there will be lots of work for young and old.

MENDOCINO.

PRICE FOR HOP PICKERS.—Ukiah Dispatch-Democrat: At the Hop Growers' meeting, held on July 5th in Ukiah, T. J. Fine presiding, W. D. White secretary, it was resolved that the price to be paid for

picking the next hop crop should be \$1 per 100 pounds. Any pickers who quit the field before the picking is completed, without good and sufficient reasons, shall receive only 75c per 100 pounds. The growers in this valley are not anxious to contract, although as high as 17c has been offered.

SACRAMENTO.

HOPS GOING UP.—Record-Union, July 13: Hops are still booming. The top offer for the product of Sacramento and Yolo county yards to date, growing crop, is 18 cents per pound, but growers who have not already sold are in no hurry to do so. Few sales have been made in this section for the past two weeks.

BIG LOTS OF FRUIT GOING.—A total of seventy-three cars of fresh deciduous fruit left California for Eastern points during the twenty-four hours preceding 8 P. M. Saturday, the 12th. The shipment consisted of three-fourths of a car of cherries, twenty cars of peaches, forty cars of plums and prunes, ten cars of pears, one and one-half car of apples and one-fourth of a car of tomatoes, and are being given a wide range of distribution, the shipments yesterday going to no less than seventeen different States.

SAN BERNARDINO.

AFTER THE APRICOT CROP.—Redlands Facts: The A. Gregory drying plant, known as the Cook & Langley drier, located west of the city, on the Santa Fe track, presents a lively appearance these days. There are 250 persons at work cutting apricots, and their labor is supplemented by five machines which are capable of pitting about five tons of the fruit per day. The crop of apricots is unusually large, but the fruit is small in size, although pretty good in quality. Prices will be, perhaps, a little low, on account of the smallness of the 'cots.

ORANGES FALLING WORSE THAN EVER.—Highland correspondence of the Sun: There is no let up in the dropping of oranges. Indeed, they seem to have taken a fresh start last week. In many orchards not hitherto affected the ground underneath the trees is carpeted with oranges the size of marbles. This does not mean that the crop will be a failure. Where trees are vigorous and healthy the yield may be nearly up to the average, but on off color trees it will be light. The latter may be found in almost every orchard and hence will cut quite a figure in the estimate.

HEAVY BEET CROP.—Chino Champion: Supt. Hache made a trip last week over all the fields tributary to the Chino factory, and as a result of his careful estimate of each field he figures on a total delivery to the Chino factory of 89,500 tons. Of course these figures are yet liable to changes on account of weather, but they are accepted as a basis upon which to make preparation for the season's campaign. It has been decided to postpone harvesting a few days so as to be sure of a steady supply of ripe beets to keep the factory running. The date now set for the commencement of the campaign is July 25th. Already 2400 tons of lime rock is on hand. On Monday twelve carloads arrived and it is coming in steadily. About 17,000 tons of lime rock will be necessary for the campaign.

SAN DIEGO.

SUMMER CROPS.—Imperial Press: Every team available is still busy getting in the summer crops, sorghum being most extensively sown now. Geo. C. Hunt has let contracts for putting in 350 acres east of Calexico and D. G. Whiting has finished sowing about a half section on Date lateral. Many farmers are putting in smaller tracts, the total acreage of sorghum in the valley now running high into the hundreds of acres.

HEAVY GRAIN YIELD.—Fallbrook Observer: The damp, cool nights of the past few weeks have brought the grain crops to the front wonderfully, and Fallbrook will again have better hay and grain crops than any other section in a radius of many miles. The hay crop will amount to about the same as that of last year, but the grain crop will be larger. Bartlett & Scott have already sold 50,000 grain sacks, and further orders are coming in daily. Johnson & Magee have already purchased 17,000 sacks. They will head about 2600 acres of grain. T. R. Treat will have 1600 acres, William Ellis 1000 acres and P. Tute 500 acres.

SAN JOAQUIN.

POTATOES FOR THE EAST.—Stockton Independent: The firms in the Southern and Middle States prefer San Joaquin potatoes, as they are far better than those raised in the East, but when the difference in prices reaches from 15 to 25 cents a hundred, of course the lower priced tubers are accepted. Inquiries about potatoes are being received here from several points, but not over a half dozen cars have been sent out, as it has been too

early to handle the new crop. Now the potatoes can be shipped to most any point without there being danger of a loss. The receipts to date have not been very heavy, but as soon as the shipping opens up thousands of sacks will be brought here weekly from the islands. The crop will be the largest ever produced, even if hundreds of acres were destroyed by the cold snap several weeks ago. The spuds are also very fine this season and up to date have been bringing a good price. When the wholesale market here goes below 70 cents a hundred the buyers throughout Arizona, New Mexico, Texas, Louisiana and Arkansas will send their orders to California.

GRASSHOPPERS STILL PLENTIFUL.—Lodi Sentinel: Ed Carry made a trip near Clements Sunday to look over his mother's ranch, where the grasshoppers are now in throngs. He reports that they are there by the thousands and are still doing damage, having destroyed a large blackberry patch and the entire pumpkin tract.

TENTH GRAIN FIRE ON SAME RANCH.—Saturday afternoon fire broke out in the grain field of Victor Jahant, near Woodbridge. This makes the tenth fire for Mr. Jahant this year. He had just finished harvesting the field when it caught this time. All the stubble was burned and only five straw dumps were left in the field of eighty acres.

SAN LUIS OBISPO.

FRICTION OF IRON SHOES CAUSES GRAIN FIRE.—Arroyo Grande Herald: By the friction on the ground of the iron shoes of a sled while hauling bundles, a fire was started recently in a grain field owned by the Commercial Bank on Cayucos creek, and leased by John Gularde. Fire had been started in the same manner several times during the earlier part of the day, but in each instance was readily extinguished by a man who walked behind. Shortly after noon a fire soon went wild and a runner was sent to Cayucos for assistance, which was freely given, and by heroic efforts was soon controlled. It was stopped within 3 feet of a setting of barley containing about 300 sacks, and on another side by a gulch beyond which was wild oats as high as one's head. Had the fire crossed the gulch, it would probably have run through to the ocean, 5 miles, as the canyon is filled with fields of dry grain and grass, and a high north wind was blowing. As it was, twelve acres of barley stubble was burned, but only a small quantity of grain was lost.

SANTA CLARA.

WARM WEATHER RUSHES CROPS.—San Jose Mercury: The continued hot weather has precipitated the fruit harvest. The crop of apricots is the largest in the history of the Santa Clara valley, and the growers can not positively get the help they require. Cannerymen are offering \$25 a ton for the fruit, but this means extra choice, while the heavy offerings to the dryers means that the growers will have to take what is offered them. In fact, \$10 a ton is a good price under ordinary circumstances from the dryers, but with the extraordinary crop and the necessity for its immediate harvest, these prices are likely to take a drop. Thus, in the face of the heaviest crop in history, the apricot growers are face to face with conditions that presage small net returns after all.

ABOUT 150 CARLOADS OF CHERRIES.—San Jose Herald: The total number of carloads of cherries shipped from the valley this season just now closed is about 150 cars. The books of the railroad companies are not open to public inspection and at the local offices no summary has yet been made. Several firms and some private individuals have been shipping and no one or two individuals can give the exact number of cars forwarded. All sources, however, agree that the number is not far from 150 cars. It may fall a few cars under this or it may foot up a few cars more. The total shipments last season were just thirty-nine cars.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: Up to \$26 per ton has been offered this week for apples delivered at packing houses. Charles Galletly estimates his prune crop this season at 200 tons, as against 125 tons last year. The apple crop is showing up heavier than was estimated a month ago. Trees are being pruned and the apples are showing plentifully from under and through the foliage. The apricot picking and curing season is so near that estimates of the crop can be made with some safety. The local and San Francisco markets will take a portion of the green fruit, but 90% of the crop will be cured. The yield is going to be the heaviest in this valley's history, and the quality is excellent. No district shows a shortage. The aggregate of the green crop will be about 3000 tons, and over 500 tons cured.

SHASTA.

SOUNDS FISHY, ALTHOUGH ABOUT A COW.—A telegram from Redding says that there is a band of six cows in the hills about Baird, the site of the Government hatchery on the McCloud, from which the Government employes, the settlers and Indians are holding aloof in terror. Captain Giles H. Lambson, who has charge of the Government station, and three other men have a mine 2 miles northwest of Baird. Frank Burns is developing it for them. The miner gets water from a spring nearby, and in the shade by the cool waters he has been keeping dynamite, for use in the tunnel. The other day Burns walked down to the spring and found six cows from the Robert Radcliff ranch drinking there. One cow had wandered over to where Burns had spread half a dozen sticks of dynamite on the ground. The miner dropped his pipe in amazement when he saw the cow slowly swallowing a stick of the deadly stuff. He wanted to yell, but realized that a fright might cause the cow to jump and explode. As he scrambled up the hill, Burns saw the cow swallow the last stick of dynamite. Warning was sent to the Radcliff ranch. When the cows got home the milker would not go near them. They were allowed to stray off again, and at last accounts the people there were waiting for the loaded cow to be blown to atoms.

SOLANO.

MACHINE CUTTERS.—Suisun Republican: Several orchardists in Suisun valley have purchased cutting and pitting machines to handle their apricots and peaches on account of the lack of sufficient women and girls to handle the crop for drying purposes. Recently two orchardists were left without help because the employes claimed they could get a better price per box for the cutting at Vacaville. The machines are faster but their work is not so satisfactory on ripe fruit.

SONOMA.

PRUNES FOR FRANCE.—Santa Rosa Press-Democrat: A big shipment of Sonoma county prunes is being forwarded to France by the Ormsbys of San Francisco, who purchased the same last year from the California Cured Fruit Association. Within the past two weeks ten carloads of prunes have been shipped to France from Santa Rosa.

HOP PRICES AND CROP PROSPECTS.—Sonoma County Farmer: Contracts with Sonoma county growers have been closed at 18½c and it is said even higher for 1902 hops. We have it direct that higher offers have been refused within the week. Some claim that the wind whipping of the ends of the vines has a tendency to curtail the crop, but others say that it confers other favors to offset this, and that our prospects are for a good crop of No. 1 quality.

TEHAMA.

BIG SALE OF PRUNES.—Red Bluff Sentinel: One of the biggest deals in fruit ever made in the northern part of the State was closed in this place when the James Feeley Co. purchased 300 tons of this year's crop of dried prunes from the Thomas creek orchards of the H. Kraft Co., which are under lease to Ah Foey, the boss Chinaman of Red Bluff. This is the first big sale of prunes in the State of this season's crop. The price was on a 2½-cent basis, which, owing to the large size of the fruit, will make an average of about 3 cents per pound.

AN ACRE OF APRICOTS THAT IS PROFITABLE.—Corning Observer: F. J. Miller has an acre of apricots on his place on the western outskirts of Corning that will bring in a good revenue this year. The trees are seven years old and planted 108 to the acre. So far those from which the fruit has been picked yield an average of 160 pounds to the tree, and those upon which the fruit still hangs are just as heavily loaded. Early in the season Mr. Miller sold his 'cots for 2½ cents per pound, but now he is getting 1½ cent at the orchard. At the latter price each tree would produce \$240 worth of fruit, or \$260 to the acre. Two years ago Mr. Miller sold the fruit from his orchard for an average of \$1.95 per tree, or \$210 for the acre.

TULARE.

PROFITABLE FRUIT.—Register: Dried apricots are now commanding 5 to 5½c per pound. Considering the large crop this season that price leaves a very profitable margin. If one had an orchard of such trees as a few of D. J. F. Reed's have turned out to be, his bank account would swell materially. He tells us of one tree that produced 1000 pounds of green apricots, sufficient to dry 143 pounds of fruit, making the tree's output worth, say, \$7.50. With seventy-five such trees to the acre an orchard of twenty acres would be a pretty good thing.

THE HOME CIRCLE.

A New Maud Muller.

Maud Muller on a summer's day
Set a hen in a brand new way.
(Maud, you see, was a city girl,
Trying the rural life a whirl.)
She covered a box with tinsel gay,
Lined it snugly with new-mown hay,
Filled it nicely with eggs, and then
Started to look for a likely hen—
Out of the flock selected one,
And then she thought that her work was done.

It would have been, but this stubborn hen
Stood up and cackled, "Ka-doot!" and then

Maud Muller came and, in hurt surprise,
Looked coldly into the creature's eyes,
Then tied its legs to the box. "You het
I know how to make you set."
But still it stood, and worse and worse
Shrieked forth its wrongs to the universe,
Clicked over the box with tinsel gay
And ignominiously flapped away.
Then a had hoy over the barnyard fence
Tee-heed: "Say, Maud, there's a difference

'Tween hens, you know, and it is that
One says 'Ka-doot!' and one 'Ka-dat!'"
Then Maud recalled that the ugly brute
She tried to set had said "Ka-doot!"
And ever since that historic day
She blushes in an embarrassed way
To think of the bobble she made once
when

She tried to set a gentleman hen.

—Wichita Eagle.

The Boy Lives on Our Farm.

The boy lives on our farm, he's not
Afraid o' horses none!
An' he can make 'em lope, or trot,
Er rack, er pace, er run.
Sometimes he drives two horses, when
He comes to town an' brings
A wagonful o' faters nen
An' roastin' ears an' things.

Two horses is a "team" he says,
An' when you drive er hitch,
The right-un's a "near-horse," I guess,
Er "off," I don't know which.
The hoy lives on our farm, he told
Me, too, 'at he can see,
By lookin' at their teeth, how old
A horse is to a T!

I'd be the gladdest hoy alive
Ef I knowed much as that,
An' could stand up like him an' drive,
An' 'ist push back my hat,
Like he comes skallyhootin' through
Our alley, with one arm
A wavin' fare-ye-well! to you,
The hoy lives on our farm.

—James Whitcomb Riley.

An Adventure in the Upper Sea.

I am a retired captain of the upper sea. That is to say, when I was a young man (which is not so long ago) I was an aeronaut and navigated that aerial ocean which is all around about and above us. Naturally it is a hazardous profession, and naturally I have had many thrilling experiences, the most thrilling, or at least the most nerve rattling, being the one I am about to relate.

It happened before I went in for hydrogen gas balloons, all of varnished silk, doubled in and lined, and all that, and fit for voyages of days instead of mere hours. The "Little Nassau" (named after the "Great Nassau" of many years back, was the balloon I was making ascents in at the time. It was a fair-sized hot-air affair, of single thickness, good for an hour's flight or so and capable of attaining an altitude of a mile or more. It answered my purpose. For my act at the time I was making half-mile parachute jumps at recreation parks and country fairs. I was in Oakland, California, filling a summer's engagement with a street railway company. The company owned a large park outside of the city, and, of course, it was to their interest to provide attractions which would send the townspeople over their line when they went out to get a whiff of country air. My contract called for two ascensions weekly, and my act was an especially taking feature, for it was on my days that the largest crowds were drawn.

Before you can understand what happened, I must first explain a bit about the nature of the hot air bal-

loon which is used for parachute jumping. If you have ever witnessed such a jump, you will remember that directly the parachute was cut loose the balloon turned upside down, emptied itself of its smoke and heated air, flattened out and fell straight down, beating the parachute to the ground. Thus there is no chasing a big deserted bag for miles and miles across the country, and much time, as well as trouble, is thereby saved. This maneuver is accomplished by attaching a weight, at the end of a long rope, to the top of the balloon. The aeronaut, with his parachute and trapeze, hangs to the bottom of the balloon, and, weighing more, keeps it right side down. But when he lets go, the weight attached to the top immediately drags the top down, and the bottom, which is the open mouth, goes up, the heated air pouring out. The weight used for this purpose on the "Little Nassau" was a bag of sand.

But to return. On the particular day I have in mind there was an unusually large crowd in attendance, and the police had their hands full keeping the people back. There was much pushing and shoving, and the ropes bulging with pressure of men, women and children. As I came down from the dressing room I noticed two girls of about 14 and 16 outside the rope, and inside the rope a youngster of 8 or 9. They were holding him by the hands, and he was struggling excitedly and half in laughter to get away from them. I thought nothing of it at the time—just a bit of childish play, no more; and it was only in the light of after events that the scene was impressed vividly upon me.

"Keep them cleared out, George," I called to my assistant. "We don't want any accidents."

"Ay," he answered, "that I will, Charley."

George Cuppy had helped me in no end of ascents, and because of his coolness, judgement and absolute reliability, I had come to trust my life in his hands with the utmost confidence. His business it was to overlook the inflating of the balloon and to see that everything about the parachute was in perfect working order.

The "Little Nassau" was already filled and straining at the guys. The parachute lay flat along the ground and beyond it the trapeze. I tossed aside my overcoat, took my position, and gave the signal to let go. As you know, the first rush upward from the earth is very sudden, and this time the balloon, when it first caught the wind, heeled violently over and was longer than usual in righting. I looked down at the old familiar sight of the world running away. And there were the thousands of people, every face silently upturned. And the silence startled me, for, as crowds went, this was the time for them to catch their first breath and send up a roar of applause. But there was no hand clapping, whistling, cheering—only silence. And, instead, clear as a bell and distinct, without the slightest shake or quaver came George's voice through the megaphone:

"Ride her down, Charley! Ride the balloon down!"

What had happened? I waved my hand to show that I had heard, and began to think. Had something gone wrong with the parachute? Why should I ride the balloon down instead of making the jump, which thousands were waiting to see? What was the matter? And, as I puzzled, I received another start. The earth was a thousand feet beneath, and yet I heard a child crying softly, and seemingly very close at hand. And, though the "Little Nassau" was shooting skyward like a rocket, the crying did not grow fainter and fainter and die away. I confess I was almost on the edge of a funk, when, unconsciously following up the noise with my eyes, I looked above me and saw a boy astride the sandbag which was to bring the "Little Nassau" to earth. And it was the same little hoy I had seen struggling with the two girls—his sisters, as I afterward learned.

There he was, astride the sandbag and holding on to the rope for dear life.

A puff of wind heeled the balloon slightly and he swung out into a space of ten or a dozen feet, and back again, fetching up against the tight canvas with a thud which even shook me thirty feet or more beneath. I thought to see him dashed loose, but he clung on and whimpered. They told me afterward, how, at the moment they were casting off the balloon, the little fellow had torn away from his sisters, ducked under the rope and deliberately jumped astride the sandbag. It has always been a wonder to me that he was not jerked off in the first rush.

"Well, I felt sick all over as I looked at him there, and I understood why the balloon had taken longer to right itself, and why George had called after me to ride her down. Should I cut loose with the parachute the bag would at once turn upside down, empty itself, and begin its swift descent. The only hope lay in my riding her down and in the boy holding on. There was no possible way for me to reach him. No man could climb the slim, closed parachute; and even if a man could, and make the mouth of the balloon, what could he do? Straight out, and fifteen feet away, trailed the hoy on his ticklish perch, and those fifteen feet were empty space.

I thought far more quickly than it takes to tell all this, and realized on the instant that the boy's attention must be called away from his terrible danger. Exercising all the self-control I possessed, and striving to make myself seem very calm, I said cheerily:

"Hello, up there, who are you?"

He looked down at me, choking back his tears and brightening up, but just then the balloon ran into a cross-current, turned half around and lay over. This set him swinging back and forth, and he fetched the canvas another bump. Then he began to cry again.

"Isn't it great?" I asked heartily, as though it was the most enjoyable thing in the world, and without waiting for him to answer, "What's your name?"

"Tommy Dermott," he answered.

"Glad to make your acquaintance, Tommy Dermott," I went on. "But I'd like to know who said you could ride up with me?"

He laughed and said he just thought he'd ride up for the fun of it. And so we went on, I sick with fear for him, and, cudgeling my brains to keep up the conversation, I knew that it was all I could do, and that his life depended on my ability to keep his mind off his danger. I pointed out to him the great panorama spreading away to the horizon and 4000 feet beneath us. There lay San Francisco bay like a great placid lake, the haze of smoke over the city, the Golden Gate, the ocean fog rim beyond, and Mt. Tamalpais over all, clear cut and sharp against the sky. Directly below us I could see a buggy, apparently crawling, but I knew from experience that the men in it were lashing the horses on our trail.

But he grew tired of looking around, and I could see he was beginning to get frightened.

"How would you like to go in for the business?" I asked.

He cheered up at once and asked, "Do you get good pay?"

But the "Little Nassau," beginning to cool, had started on its long descent, and ran into counter currents which bobbed it roughly about. This swung the hoy around pretty lively, smashing him into the bag quite severely. His lip began to tremble at this, and he was crying again. I tried to joke and laugh, but it was no use. His pluck was oozing out, and at any moment I was prepared to see him go shooting past me.

I was in despair. Then, suddenly, I remembered how one fright could destroy another fright, and I frowned up at him and shouted sternly:

"You just hold on that rope! If you don't I'll thrash you within an inch of your life when I get you down on the ground. Understand?"

"Ye-ye-yes, sir," he whimpered, and I saw that the thing had worked. I was nearer to him than the earth, and he was more afraid of me than falling.

"Why, you've got a snap up there

on that soft bag," I rattled on.

"Yes," I assured him, "this har down here is hard and narrow, and it hurts to sit on it."

Then a thought struck him, and he forgot all about his aching fingers.

"When are you going to jump?" he asked. That's what I came up to see.

I was sorry to disappoint him, but I wasn't going to make any jump.

But he objected to that. "It said so in the papers," he said.

"I don't care," I answered. "I'm feeling sort of lazy to-day, and I'm just going to ride down the balloon. It's my balloon, and I guess I can do as I please about it. And, anyway, we're almost down now."

And we were, too, and sinking fast. And right there and then that youngster began to argue with me as to whether it was right for me to disappoint the people, and to urge their calms upon me. And it was with a happy heart that I held up my end of it, justifying myself in a thousand different ways, till we shot over a grove of eucalyptus trees and dipped to meet the earth.

"Hold on tight!" I shouted, swinging down from the trapeze by my hands in order to make a landing on my feet.

We skimmed past a barn, missed a mesh of clothesline, frightened the barnyard chickens into a panic and rose up again clear over a haystack—all this almost quicker than it takes to tell. Then we came down in an orchard, and when my feet touched the ground I fetched up the balloon by a couple of turns of the trapeze around an apple tree.

"Tommy Dermott," I said, when I had got my nerves back somewhat. "Tommy Dermott, I'm going to lay you across my knee and give you the greatest thrashing a hoy ever got in the world's history."

"No you don't," he answered, squirming around. "You said you wouldn't if I held on tight."

"That's all right," I said, "but I'm going to just the same. The fellows who go up in balloons are bad, unprincipled men, and I'm going to give you a lesson right now to make you stay away from them, and from balloons, too."

And then I gave it to him, and if it wasn't the greatest thrashing in the world, it was the greatest he ever got.

But it took all of the grit out of me, left me nerve broken, that experience. I canceled the engagement with the street railway company, and later on went in for gas. Gas is much the safer, anyway.—Jack London in New York Independent.

"How's TIMES?" asked the tourist. "Pretty tolerable, stranger," responded the old man, who was sitting on a stump. "I had some trees to cut down, but the cyclone leveled them and saved me the trouble." "That was good." "Yes; and then the lightning set fire to the brush pile and saved me the trouble of burning it." "Remarkable! But what are you doing now?" "Waiting for an earthquake to come along and shake the potatoes out of the ground."—Chicago News.

DOCTOR—Nothing serious, I assure you. Your wife has a small ulcer at the end of her tongue. Enpeck—Say, Doctor, is that a fact? Doctor—Certainly, sir! I hope you don't think I would misrepresent the case? Enpeck—Oh, no; but your discovery that her tongue really had an end seems too good to be true.—Chicago News.

"You seem rather hilarious to-day," the lathe remarked to the huzz saw. "Yes," remarked the buzz saw, "the man who runs me brought some whisky into the shop with him a little while ago." "Well?" "Well, I took two or three fingers at his expense."—Credit Lost.

MRS. YOUNGHRIDE—I've come to complain of that flour you sent me. Grocer—What was the matter with it? Mrs. Younghride—It was tough. I made a pie with it and it was as much as my husband could do to cut it.—Troy Times.

Old Friends.

Make new friends, but keep the old,
Those are silver, these are gold,
New-made friends, like new wine,
Age will mellow and refine.
Friendships that have stood the test,
Time and change, are surely best.
Brow may wrinkle, hair turn gray,
Friendship never owns decay;
For 'mid old friends, kind and true,
We once more our youth renew.
But, alas! old friends must die—
New friends must their place supply;
Then cherish friendship in your breast,
New is good, but old is best.
Make new friends, but keep the old,
Those are silver, these are gold.

What Is Happiness.

'Tis an empty fleeting shade,
By imagination made;
'Tis a bubble, straw, or worse;
'Tis a baby's hobby horse;
'Tis ten thousand pounds a year;
'Tis a title; 'tis a name;
'Tis a puff of empty fame,
Fickle as the breezes blow;
'Tis a lady's Yes or No;
And when the description's crowned
'Tis nowhere to be found.

—Joseph Brown Ladd.

Vacation.

The man who gets a week's vacation
Is feeling blue
And thinking of their glad condition
Who rest through two.
He thinks who gets two weeks' vacation,
"How glad I'd be
If I could have some fine position
Where I'd get three."

—Chicago Record-Herald.

Digestion and Happiness.

"Our digestive organs form the foundation on which the whole living structure rests," say J. M. Tyler, professor of biology in Amherst College, in an article in Good Housekeeping. "Their well-being is essential to our very existence. A man can survive with very few brains, this is a fact of daily observation, if not of experience. But when the digestive system fails, the whole body collapses. The strongest muscles and best brain cannot save it. Its destruction is sure and near. A good stomach with a moderate brain is better than the best brain with a feeble stomach. The better the brain and muscle the greater the need of good digestion. The stomach is far older than brain, or even muscle. It was almost the first organ to take form in the evolution of the animal kingdom. It is worthy of all reverence. To neglect or despise it is about as wise as the objection of the lady to paying so much for the foundation and frame of her new house because nobody would ever see them.

"Certain hints as to the proper use and care of this venerable system can be drawn from its purpose and structure. Its business is to dissolve and prepare materials for the growth and repair of our bodies, and for fuel. Three or four different kinds of substances are required for these different purposes. We need albuminoids, fats, starch, etc. Each of these is needed in a certain amount or proportion, but no one article of diet contains the desired proportion of each and all. Lean meat, eggs, peas and beans are rich in albuminoids; potatoes and grain are rich in starch; turnips, onions and cabbages are poor in both. A mixed diet is desirable. We may crowd our alimentary canal with more than it can possibly dissolve, or we may eat and digest a larger amount of certain substances than the body can use. In both cases loss and harm must result.

"The stomach is lined by a very delicate membrane. In the folds of this lining, near the inner surface, are the glands which secrete the gastric juice. These delicate glands are evidently not benefited by being parboiled with scalding tea and coffee, or continually deluged with ice water. Extremely cold or hot drinks should be taken very slowly. The digestive fluids are weak. Too great dilution by large amounts of water taken with the solid food cannot be helpful. Shall we, then, drink

nothing with our meals? This would be to rush to the other extreme. The food can best be digested in the stomach when that sack is moderately distended.

"The muscles of the tubular intestine work best against a moderate amount of resistance. Food is all the better for containing a certain amount of insoluble matter. This stimulates the action of muscle and gland by the friction which it produces.

"The digestive organs, like nerve and muscle, improve by a fair amount of exercise, and degenerate through disuse. If we live for a long time on prepared, already semi-digested foods the stomach forms habits of laziness, and rebels when a moderate effort is required of it. The woman who tries to preserve her digestive powers by requiring the least possible exercise from them is almost as unwise as the man who overtaxes them. An eccentric physician once said of teachers: "They live on tea and crackers; their stomachs shrink; then they can't fight. After that, what is the good of them?" But only a very athletic stomach can be helped by half a mince pie just before retiring. * * *

"Certainly very valuable foods may contain but little nutriment. An apple or an orange probably contains hardly more solid material than a large marrowfat pea. Yet the juice of these foods contains water in very refreshing combination, while the sugar, acid, etc., are the very best promoters of health, especially in hot weather. Spices and condiments have their place. They improve the taste of the food, and this aids in no small degree in its digestibility. They stimulate the flow of saliva and of other digestive fluids. Salt is not only a condiment, but a true food absorbed and used by the tissues."

Substitutes for Sugar.

The growing use of saccharin and other sweet coal-tar derivatives instead of sugar is noted in the course of an article on food adulteration by Dr. de Lavarenne, editor of La Presse Medicale (April 30). Says the British Medical Journal, in an abstract of those paragraphs in which he treats of this subject:

"It (saccharin) is one of the many bodies made out of coal-tar, and is, of course, not sugar at all, although many people are quite convinced it is. It is not only used to sweeten beer, but it is now also employed in the manufacture of syrups, jams, lemonades, wines (especially champagne), cider, brandy, pastry and chocolate. Special substances of this nature are on the market for sweetening cider and brandy. Among these sucramine may be mentioned, which is said to be 700 times sweeter than cane sugar. Other products of the same kind are sugar extract (made in Switzerland), cannabin, etc. All these names are misleading, for the substances are only sugars in name, being all coal-tar derivatives. They are not foods. Moreover, their long continued use may gravely affect the digestive functions. According to Prof. von Bunge of Basle, saccharin reappears in the saliva after being absorbed, and in this way leads to a persistent sweet taste in the mouth, which interferes with the appetite. Dr. Plugge has shown that the addition of saccharin in artificial digestion experiments interfered with the breaking up of food substances. Dulcin, another sweetening body, which has been used as a substitute for saccharin, was given to a dog at the rate of one gram a day. The animal died in three weeks.—Literary Digest.

BARBER—That man who just went out has a good head for business. Customer—That old, bald-headed gentleman? Barber—Yes; I sell him three bottles of hair renewer a month.—Tit-Bits.

"SAY, papa, if we were living at the center of the earth wouldn't we all be funny?" "What makes you think so, my son?" "'Cause this geography says everything there loses its gravity."

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DOMESTIC ECONOMY.

Hints to Housekeepers.

Floors that have been shellacked may be cleansed without injuring the polish by wiping over rapidly with clean cloths dipped in clear warm water, to which kerosene has been added in the proportion of a tablespoonful to a pail of water.

To keep flowers fresh for a long time, take them out of their vases at night, cut off a tiny piece of the stem in a slanting direction, and put them in a large bowl with plenty of water, or lay them in a box sprinkled with water, cover tightly, and put it outside the window.

A screen of some kind is invaluable in a sick room, especially one of the lighter kind that can easily be moved about the room. Should there be no suitable screen in the house, it is very easy to manufacture one from a clotheshorse, with a few yards of art muslin or cheesecloth sewed neatly over it.

For light soups that are especially palatable for hot weather the thrifty housekeeper will find it easy to provide. Much of the usually discarded part of vegetables may be retained to advantage. Clean, fresh peapods, for example, make an excellent light soup stock. They should be put in cold water, and simmered slowly till tender. Then press through a colander, flavor with a clove of garlic, a carrot, and a bit of parsley, and a single slice of bacon, and a very good soup is the result.

A cheese salad needs enough dry and rich cheese to measure four tablespoonfuls. Mix with this one pint of whipped cream and one tablespoonful of gelatine. Season highly with salt, cayenne and a little dry mustard. When thoroughly mixed put into small individual moulds, and set in the ice box. Serve with French dressing and lettuce hearts. Sometimes English walnuts are chopped very fine, and sprinkled over the moulds as they are arranged on the lettuce leaves.

Chocolate, when carefully made and served, is delicious as well as wholesome. Put one ounce of unsweetened chocolate into a saucepan, and pour on it gradually one pint of boiling water, stirring all the time. Put the saucepan on the fire and stir until the chocolate is all dissolved, then add a pint of granulated sugar, and stir until it begins to boil. Cook for three minutes longer without stirring, then strain and cool. Add one tablespoonful of vanilla extract, bottle and store in a cool place. When needed put two tablespoonfuls of crushed ice in a tumbler, add two tablespoonfuls of the chocolate syrup, three tablespoonfuls of whipped cream, one gill of milk and a half a gill of carbonic water. Stir thoroughly before drinking.

"BUT you must remember, dear, that you promised to 'love, honor and obey' your husband." "It isn't possible, grandma. I defy any woman to love and honor a man who always insists on being obeyed."—Philadelphia Bulletin.

Domestic Hints.

STEAMED EGGS.—Break the eggs into a buttered dish, set inside a steamer over a kettle of boiling water, and steam until the whites are thoroughly cooked and firm. Season with butter, pepper and salt.

LOBSTER OMELET.—Take the meat from one boiled lobster and pick it into small pieces; put it into a saucepan with one-half cup of white wine and a small piece of butter. Moisten with a little cream and let it cook for five minutes. Make a plain omelet and fold the lobster mixture in the center.

HAM WITH CREAM SAUCE.—Heat a frying pan very hot, and into it put slices of raw ham. Do not use any fat to fry it. When crisp take it out and lay it on a hot platter. Add one cupful of milk to the fat in the pan; when it boils thicken it with one teaspoon of flour; season with salt and pepper. Pour the sauce over the ham and serve.

CREAMED POTATOES.—Cut cold boiled potatoes into small dice. Cover them with milk and boil up once or twice. Season with pepper, salt and butter. Remove to one side and thicken with a little flour and water. Creamed potatoes may also be prepared by first boiling the small squares, then turning the milk on while they are hot, and continuing in the same way as above.

CHICKEN JELLY.—A young chicken nicely prepared, cut up into small pieces, put in a saucepan with three pints of water, cooked rather slowly, removing the grease from the top continually. Allow it to cook for about five and one-half hours, season to taste with salt, pepper, celery and parsley; when finished, stand aside to cool for some hours, then skim the grease off the top and serve either hot or cold.

RHUBARB CREAM.—Take two pounds of green rhubarb which has been peeled and cut into small pieces, put into a saucepan with three cups of water and cook until it is soft enough to mash into a pulp; strain through a fine sieve and measure; to every pound of fruit add a pound of sugar and stir over the fire until the sugar is dissolved, then boil for twenty minutes. Put an ounce of gelatine to soak in a cupful of cold cream, and, when soft, dissolve over hot water. Let it cool; and when the rhubarb syrup is cool, add the cream and juice of one lemon, stirring constantly, and turn into a glass or earthen mould and place in a cold place to set for at least two hours; serve with whipped cream or a compote of figs, prunes or oranges.

\$100 Reward, \$100.

The readers of this paper will be pleased to learn that there is at least one dreaded disease that science has been able to cure in all its stages, and that is Catarrh. Hall's Catarrh Cure is the only positive cure known to the medical fraternity. Catarrh being a constitutional disease, requires a constitutional treatment. Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system, thereby destroying the foundation of the disease, and giving the patient strength by building up the constitution and assisting nature in doing its work. The proprietors have so much faith in its curative powers, that they offer One Hundred Dollars for any case that it fails to cure. Send for list of testimonials.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, July 16, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	74 3/4 @ 73 3/4	75 @ 74
Thursday.....	74 @ 73 3/4	74 3/4 @ 73 3/4
Friday.....	73 @ 74 1/4	73 3/4 @ 74
Saturday.....	73 3/4 @ 73 3/4	73 3/4 @ 73 3/4
Monday.....	73 3/4 @ 72 3/4	74 @ 73 3/4
Tuesday.....	72 3/4 @ 71 3/4	73 3/4 @ 72 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	35 @ 33 3/4	34 3/4 @ 33 3/4
Thursday.....	34 3/4 @ 33 3/4	34 @ 33 3/4
Friday.....	33 3/4 @ 34 1/4	33 3/4 @ 33 3/4
Saturday.....	33 3/4 @ 33 3/4	33 3/4 @ 33 3/4
Monday.....	33 3/4 @ 32 3/4	32 3/4 @ 32 3/4
Tuesday.....	32 @ 31 3/4	32 @ 31 3/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 15 1/2 @ 1 16 1/2	—
Friday.....	1 16 1/2 @ 1 16 1/2	1 19 1/4 @ 1 18 3/4
Saturday.....	1 15 1/2 @ 1 15 1/2	1 18 1/4 @ —
Monday.....	1 15 1/2 @ 1 15 1/2	—
Tuesday.....	1 15 1/2 @ 1 14 1/2	—
Wednesday.....	1 15 @ 1 14 1/2	1 17 @ —

WHEAT.

The outward movement of wheat thus far this season has been slow, which is not unusual for July, although the current month is making a more than ordinarily poor showing in the matter of exports of this cereal from California, even as compared with corresponding months of previous years. Stocks of old wheat in the hands of shippers were reduced to very small proportions before the new season opened, and it is quite evident that buyers on export account, as well as other purchasers, are not securing new wheat in as great quantity as they desire, or as rapidly as they could handle it to advantage. The market for actual wheat shows a generally firm and healthy tone, despite occasional sags in speculative values, which are moved up or down through the manipulations of sharpers, for the purpose of getting victims into the net or fleeing those already there. Although there is a fair-sized fleet of idle ships in port and a good supply of ocean tonnage headed this way, the chartering of ships is not active at present, owners of vessels asking higher figures than have been lately current. One ship arrived the past week under charter for wheat cargo to Europe at 28 shillings, which is an advance of about 1s 6d over prevailing freight rates of the past fortnight, equivalent to about 30c per ton. The improvement in values in foreign wheat markets has been in the meantime, however, much greater than the advance here in ocean freight rates. Market closed quiet, with buyers offish, owing to breaks in the speculative market.

California Milling.....	1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside.....	1 13 1/4 @ 1 15
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 10 @ 1 12 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	5s9d @ 5s9 1/4d	6s6d @ 6s6 1/4d
Freight rates.....	36 1/4 @ 38	— @ 26 1/4s
Local market.....	95 @ 97 1/4	1 13 1/4 @ 1 16 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.14 1/2 @ 1.16.

May, 1903, delivery, \$1.18 1/2 @ —.

Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.15 1/2 @ 1.16; May, 1903, \$1.18 1/2 @ —.

FLOUR.

There have been no special changes in quotable rates, but the market has been inclining against the buying interest, and stiffer, rather than easier prices, are likely to be experienced in the near future. Spot stocks are not of heavy volume and trade is of good average proportions for this time of year, both for shipment and on local account.

Superfine, lower grades.....	82 @ 80 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

While there is fairly active inquiry for this cereal, both from shippers and handlers on local account, buyers are as a rule very conservative in their bidding, anticipating more liberal offerings and increased pressure to realize at an early day. Their expectations in this regard, however, may not be realized. Should there be heavy foreign requirements for this cereal, more firmness than at present exists is likely to be developed for best grades. Common qualities of barley may not improve materially in prices, as such stock has to come into competition with other feed cereals. Ordinary or feed barley is now relatively as high or higher than feed oats.

New Barley.....	85 @ 95
Feed, No. 1 to choice old.....	92 1/4 @ —
Feed, fair to good.....	90 @ 92 1/4
Brewing, No. 1 to choice.....	1 00 @ 1 02 1/4
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

OATS.

There are fairly liberal arrivals of California product, but no receipts from points outside the State. In sixty or ninety days Oregon and Washington will be prepared to forward freely, but whether or not they will do so will depend greatly on conditions here. The prospects at the moment are not encouraging for consigning oats here from outside points, the market being heavily stocked with the local product as compared with the demand, and values are at a low range.

White Oats, fancy feed.....	1 30 @ —
White, good to choice.....	1 25 @ 1 27 1/2
White, poor to fair.....	1 10 @ 1 15
Gray, common to choice.....	1 10 @ 1 25
Millings.....	1 30 @ 1 32 1/2
Surprise, good to choice.....	1 30 @ 1 35
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 15

CORN.

Not much doing here in this cereal, prices being too high to encourage free consumption. Even at moderate figures, corn has seldom been used very extensively in this State. There is not much arriving here from any quarter. Stocks in store and warehouses are of rather light volume, but have been decidedly smaller in times past. Supplies are mainly in few hands.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/4 @ 1 52 1/4

RYE.

There is little quotable improvement to record in prices, but some prospect for outward movement, which may help the market later on. One of the ships now on the engaged list is chartered for Antwerp direct and is expected to take considerable of this cereal as cargo.

Good to choice.....	82 1/4 @ 87 1/4
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BUCKWHEAT.

Same inactivity previously noted. There is none arriving and no urgent inquiry observable at present.

Good to choice.....	1 55 @ 1 70
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BEANS.

Market is ruling quiet, as is generally the case at this time of year. Spot stocks are largely in second hands and are being in most instances rather steadily held. Large and small White and Pink beans constitute the bulk of supplies, but the White beans take the lead decidedly in the matter of quantity of present holdings. There is a moderate amount of Bayos on market, more than enough to satisfy the demand at full current figures. Limas are in quite light supply here and are not being offered freely to arrive. Black-eyes are so scarce as not to warrant quotations.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 35 @ 2 50
Pinks.....	2 00 @ 2 10
Bayos, good to choice.....	2 75 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	3 25 @ 3 50
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Little or nothing doing in this line. Green Dried are in very fair supply, but most of the millers are well stocked for the time being with this variety. Niles are in such scanty supply as not to be quotable.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

Market is firm at rates lately prevailing, and would show activity if wools were offering here in noteworthy quantity at the current figures. The bulk of the Spring clip has been placed, most of it having been purchased in the interior and at comparatively stiff figures. The market is particularly firm for bright and free wools, such being most actively sought

after and meeting with most of the competitive bidding between buyers. Not much Fall clip has yet come forward, and no receipts of wholesale proportions are expected for several weeks to come.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	11 @ 13
Eastern Oregon, fair to good.....	9 @ 10
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

While the market shows firmness, with fair prospects for coming crop meeting with a good demand at materially better prices than have been current the past season, there is considerable boom talk which is not warranted by existing conditions. For instance, it has been stated that prices were expected to go to 25c wholesale this season and might touch 30c. It has been clearly demonstrated that hops are not an actual necessity to brewers. They have gone wholly without them, and can do so again. They have numerous substitutes which they can use to decided advantage where hops cost them 25c per pound, and many brewers have used substitutes when hops were obtainable for less than 25c. Hops of 1901 crop are quotable nominally at 18@20c, and contracts for coming crop are quoted at 17@18c per lb. for choice.

HAY AND STRAW.

The market is showing a better tone for new hay, especially for high grade stock desirable for storing. Little distinction is now being made by buyers between new and old. In fact, in many instances, and in all cases where the hay is wanted for long storing, new is now being given the preference, at figures close to those current for choicest old. Straw is in quite limited spot supply.

NEW.

Wheat, good to choice.....	9 00 @ 11 50
Wheat and Oat.....	8 50 @ 11 00
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	5 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 1/2 bale.....	40 @ 50

MILLSTUFFS.

Continued light arrivals of mill offal and light spot holdings enable handlers to exact previously quoted high figures. Not much is required, however, to satisfy the inquiry at existing prices. Rolled Barley and Milled Corn are held at practically the same figures ruling on these descriptions for several weeks past.

Bran, 1/2 ton.....	19 00 @ 20 00
Middlings.....	22 00 @ 24 00
Shorts, Oregon.....	19 00 @ 21 00
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

There is no wholesale business at present worth noting in any of the seeds quoted herewith. Quotations are without appreciable change, but are largely nominal. Very little Flaxseed arriving. Mustard is in too light stock to admit of any noteworthy transactions. Trade in Bird Seed is mostly of a light jobbing character.

Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 60 @ 3 75
Mustard, Trieste.....	3 30 @ 3 60
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/2 @ 1 1/4
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Movement in Grain Bags continues fairly active to interior points. Market is moderately strong at prevailing values, not in consequence of any dearth of supplies, but on account of the bulk of holdings being in few hands and little or no competition among sellers. Business in Fruit Sacks is of fairly liberal proportions, prices for same remaining quotably as last noted.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ —
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ —
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 38
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	8 1/4 @ —
Gunnies.....	— @ —
Bean Bags.....	5 1/4 @ 5 1/2
Fruit Sacks, cotton, three sizes.....	5 1/2 @ 6 1/4
Fruit Sacks, Jute.....	7 @ 7 1/2

HIDES, PELTS AND TALLOW.

There is no lack of inquiry for Hides and values are being well maintained at the prevailing range. Pelt market is showing steadiness, with demand much

better than it was earlier in the season. Tallow sells promptly at full current rates.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/4 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/2	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 60 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	90 @ —	1 20 @ —
Pelts, medium, 1/2 skin.....	50 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	40 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	— @ —
Tallow, No. 2.....	4 1/4 @ —	4 1/2 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

The market has a firm tone, but is not showing much activity. Dealers now concede the fact that the yield is light, but claim that not much will be required for shipment, except at lower figures than are now generally asked. This may or may not prove to be correct. There is very little doing in a wholesale way. Small transfers are being made on local account at an advance on quotations.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/2
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

BEESWAX.

Receipts and spot stocks are of slim volume. Current values are being well maintained.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

The market for Beef and Mutton has developed no special changes the current week. Demand is of fair average for this time of year and supplies are proving sufficient for immediate requirements, values ruling steady. Hog market showed firmness, especially for medium, there being an active demand for this description.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 1/4 @ —
Hogs, large, hard, over 250 lbs.....	6 1/4 @ —
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	8 @ 8 1/4
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	7 @ 8 1/4
Lamb, spring, 1/2 lb.....	9 @ 9 1/4

POULTRY.

The market has shown a somewhat better tone than for several weeks preceding. Quotable values were without pronounced change, but there was an improved demand and higher average prices were realized. All stock in prime to choice condition, young and old, met as a rule with tolerably prompt custom. The inquiry was mainly for medium size to full grown Young Chickens and for large and fat old Hens and Roosters.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1/2 lb.....	12 1/4 @ 13
Turkeys, alive, Gohblers, 1/2 lb.....	12 1/4 @ 13
Hens, California, 1/2 dozen.....	4 50 @ 6 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	5 00 @ 6 50
Fryers.....	3 50 @ 4 50
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	2 25 @ 2 50
Ducks, old, 1/2 dozen.....	2 50 @ 3 00
Ducks, young, 1/2 dozen.....	3 00 @ 4 00
Geese, 1/2 pair.....	1 25 @ —
Goslings, 1/2 pair.....	1 25 @ —
Pigeons, old, 1/2 dozen.....	1 50 @ 1 75
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Market is firm and higher, with receipts on the decrease and the demand improving. Prices have advanced fully a cent per pound on best qualities and about half a cent on the more common grades. That there will be further hardening of values in the near future is altogether probable.

Creamery, extras, 1/2 lb.....	22 @ —
Creamery, firsts.....	21 @ —

Dairy, select.....	21 @—
Dairy, firsts.....	20 @—
Dairy seconds.....	18 @19
Mixed store.....	17 @18

CHEESE.

There are no heavy stocks of any description and a narrower range in quality of offerings than ordinarily. Most of the cheese offering being good to choice new, values for the time being are kept within rather close compass. Demand is fair and market steady at the prices ruling.

California, fancy flat, new.....	10 1/2 @—
California, good to choice.....	10 @—
California, fair to good.....	— @—
California, "Young Americas".....	10 1/2 @11 1/4

EGGS.

A change for the better has taken place, values being on the upward course, more particularly for choice to select fresh. Further advances in prices for high grade stock are looked for the coming week. The tendency for some time to come will be to a wider range of prices, fancy qualities commanding still firmer figures, while on common grades values will be more stationary.

California, select, large, white and fresh.....	19 1/2 @20
California, select, irregular color & size.....	17 @18
California, good to choice store.....	15 1/2 @16 1/4

VEGETABLES.

Nearly all varieties of vegetables are arriving freely and market as a whole is lacking in firmness. Changes in quotable rates are almost without exception to easier figures than had been ruling. Market was especially weak for Tomatoes and String Beans of other than most select qualities. There were sales of String Beans to canners down to 1c per lb. Green Corn is in good supply and other than choice in crates from near-by points is receiving very little attention. Green Peas of high grade were in light receipt.

Asparagus, # box.....	1 00 @2 25
Beans, String, # lb.....	1 1/2 @ 3 1/4
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @—
Corn, Green, Alameda, # crate.....	1 25 @1 50
Corn, Green, # sack.....	75 @1 25
Cucumbers, # large box.....	60 @ 75
Egg Plant, # box.....	50 @ 75
Garlic, # lb.....	2 @ 2 1/4
Onions, Yellow Danver, # cental.....	90 @1 00
Onions, New Red, # cental.....	40 @ 65
Gkra, Green, # box.....	1 25 @1 50
Peas, Sweet garden, # lb.....	2 1/2 @ 3
Peas, good to choice, # sack.....	— @—
Peppers, Green Chile, # lb.....	3 @ 4
Peppers, Bell, # lb.....	4 @ 6
Rhubarb, # box.....	40 @ 75
Summer Squash, Bay, # large box.....	50 @ 75
Summer Squash, # small box.....	25 @ 35
Tomatoes, # small box.....	25 @ 35
Tomatoes, River, # large box.....	75 @1 00

POTATOES.

While there were fairly liberal receipts of potatoes, and market presented an easy tone, there were no radical declines in quotable values for choice to select. Salinas Burbanks have commenced to come forward in quotable quantity, and are meeting with good inquiry at prevailing rates. Old Oregon Burbanks are still in demand for seed, and in a limited way are selling at tolerably stiff prices, with offerings light.

Burbanks, Salinas, # cental.....	1 25 @1 50
River Burbanks, good to select, # cental.....	60 @1 25
Early Rose.....	65 @ 80
Garnet Chile.....	75 @ 90

The Fruit Market.

FRESH FRUITS.

Most kinds of seasonable fruits are arriving quite freely, and it is the exception where the market is displaying any noteworthy firmness, especially for ordinary qualities. Where canners had to be depended on for a market, decidedly low prices in most instances had to be accepted. Cherries were in light receipt, but, with no active inquiry for this fruit, prices were without improvement. Apricot market showed a little better tone than preceding week, particularly for choice to select, with offerings not especially heavy of latter sort. Peaches were in ample supply to keep the market rather favorable to buyers, the quotable range continuing close to the figures last noted; late varieties are beginning to make a good showing, both as to quality and quantity. Plums were in heavy stock, and, unless of very desirable quality, moved slowly at low prices. Berries of nearly all kinds in season were well represented and in the main sold at a low range of prices, inside quotations being based on bids of canners. A few Whortleberries from Sonoma county brought 15c. per pound, but this was not a quotable figure. Cantaloupes and Nutmeg Melons were in free receipt from various sections and market was lower. Watermelons were received by the carload from Indio and Fresno and were offered at reduced rates.

Apples, # fancy, 4-tier box.....	1 00 @1 25
Apples, good to choice, # 50-lb. box.....	75 @1 00

Apples, common to fair, # 50-lb. box.....	50 @ 65
Apricots, Royal, # crate.....	35 @ 65
Apricots, # ton.....	10 00 @20 00
Cantaloupes, Winters, # crate.....	2 25 @ 2 75
Cherries, Black, # box.....	30 @ 50
Cherries, Black, in bulk, # lb.....	3 @ 5
Cherries, Royal Anne, # box.....	30 @ 50
Cherries, Royal Anne, # lb.....	3 @ 5
Blackberries, # chest.....	2 00 @ 3 50
Raspberries, # chest.....	4 00 @ 7 00
Currents, # chest.....	2 00 @ 3 50
Logan Berries, # chest.....	2 50 @ 4 00
Nutmeg Melons, # small box.....	40 @ 50
Peaches, # box.....	20 @ 40
Peaches, # basket.....	25 @ 35
Pears, Early, 20-lb. box.....	35 @ 50
Plums, choice large, # box or crate.....	40 @ 60
Plums, small, # box.....	25 @ 40
Prunes, Tragedy, # crate.....	40 @ 60
Strawberries, Longworth, # chest.....	4 00 @ 7 00
Strawberries, Melinda, # chest.....	3 00 @ 5 00
Watermelons, # doz.....	1 50 @ 4 00

DRIED FRUITS.

Business in evaporated and dried fruits is not as brisk as many think it should be at this date. The lack of activity is not owing to absence of demand, nor to scarcity of supplies, at least for near future delivery, but there is considerable difference in the views of producers and dealers as to values, present and prospective, and this is the main barrier to immediate activity. Apricots have been largely contracted for ahead. Handlers are bidding 5 1/2c in the sweat boxes for good average stock. The quotable range for Royal Apricots in sacks, San Francisco delivery, may be said to be 5 1/2 @ 7 1/2c, as to quality, with choice to fancy Moorparkers nominally 7 @ 9c. The entire San Joaquin Valley output of Apricots is reported practically disposed of under future delivery sales. A few new Evaporated Apples have been placed in the neighborhood of 11c for fairly choice, but this figure is wholly unwarranted as a quotation, being obtainable in little other than a retail way on a practically bare market. In about 30 days new Apples will be offering in sufficient quantity to justify giving regular quotations. New Prunes are wanted on the basis of 2 1/2c in bulk for the four sizes, Santa Claras, but growers as a rule are holding for better figures. Numerous recent orders for carload lots on the 2 1/2c basis have been turned down by dealers, owing to inability of securing future deliveries from growers at the figures specified. France will not only have no Prunes for shipment this season, but is in the field as a buyer, having already purchased under contract several hundred carloads of our coming crop. Dealers quote new Peaches for future delivery at 4 1/2 @ 7 1/2c, as to quality, delivered in sacks in carload lots at primal points, but there are no evidences of much being done at present in this fruit.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	— @—
Apricots, Royal, good to choice, # lb.....	6 @ 6 1/4
Apricots, Royal, fancy.....	7 @ 7 1/4
Nectarines, # lb.....	— @—
Peaches, unpeeled, choice.....	6 1/2 @ 7 1/4
Peaches, peeled, in boxes.....	12 @ 14
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2 @ 3c; 50-60s, 4 @ 4 1/4c; 60-70s, 3 1/2 @ 3 3/4c; 70-80s, 3 @ 3 1/4c; 80-90s, 2 1/2 @ 2 3/4c; 90-100s, 2c @ 2 1/4c; these figures for 1901 crop.	

COMMON SUN-DRIED.

Apples, sliced.....	— @—
Apples, quartered.....	— @—
Peaches, unpeeled.....	6 @ 6 1/4
Pears, prime halves.....	— @—
Plums, unpitted, # lb.....	1 1/2 @ 2 1/4

CITRUS FRUITS.

Oranges are not in heavy stock, but the demand for them is so insignificant that they are no longer quotable. Lemons of high grade have been meeting with fair custom at practically unchanged values, but common qualities were not much inquired for, although obtainable at decidedly easy figures. Limes were in good supply and market was in favor of buyers.

Lemons—California, select, # box.....	3 25 @3 50
California, good to choice.....	2 00 @3 00
California, common to fair.....	1 25 @2 00
Grape Fruit, # box.....	2 00 @2 50
Limes—Mexican, # box.....	4 50 @5 00

NUTS.

Spot stocks of Almonds and Walnuts are very light and are mainly of very ordinary quality. Quotations for the present are necessarily largely nominal. In the way of contracting to make future deliveries at figures named by dealers, there is little or no disposition shown on the part of growers to do business. Handlers quote 10 1/2 @ 11c for Almonds of the Hatch varieties, 7 1/2 for Drake's Seedling and 6 1/2 for Languedocs, these figures being for carload lots at producing points.

California Almonds, shelled.....	15 @18
California Almonds, paper shell, # lb.....	12 @13
California Almonds, soft shell.....	9 @10
California Almonds, hard shell.....	5 @6
Cal. White Walnuts, No. 1 soft shell.....	11 @12
Cal. White Walnuts, No. 2 soft shell.....	9 @10
Cal. White Walnuts, No. 1 hard shell.....	9 @10
Cal. White Walnuts, No. 2 hard shell.....	7 @8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 7

WINE.

There are no new developments to report in the wine market. Not much doing in a wholesale way, or in transfers from growers, so far as reported. Neither buyers nor sellers seem inclined to rush matters at present. In consequence of the inactivity prevailing in the wholesale market, values for round lots are not for the time being very clearly defined. Quotations for dry wines of last year's vintage remain at 20 @ 25c. per gallon wholesale, as to quality, location and other conditions. The top figure is more in accord with the views of holders than with the ideas or bids of buyers. On the other hand, it would be difficult to secure any wine at inside quotation, particularly of qualities possessing any merit.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	75,779	105,036
Wheat, centals.....	73,438	79,801
Barley, centals.....	34,207	46,007
Oats, centals.....	12,503	25,346
Corn, centals.....	310	610
Rye, centals.....	1,200	1,200
Beans, sacks.....	1,485	1,956
Potatoes, sacks.....	17,027	20,445
Onions, sacks.....	2,083	2,592
Hay, tons.....	2,932	3,888
Wool, bales.....	2,123	2,605
Hops, bales.....	..	..

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	75,116	85,732
Wheat, centals.....	62,388	62,532
Barley, centals.....	7,217	9,560
Oats, centals.....	2,542	2,545
Corn, centals.....	971	971
Beans, sacks.....	159	236
Hay, bales.....	2,408	2,608
Wool, pounds.....	842	1,695
Hops, pounds.....	2	3
Honey, cases.....	2	3
Potatoes, pack's.....	1,148	1,297

California Dried Fruit at New York.

NEW YORK, July 16.—Evaporated apples, common, 8 @ 10c; prime wire tray, 10 1/2 @ 10 1/2c; choice, 11 @ 11 1/4c; fancy, 11 1/2 @ 12c.
California Dried Fruits.—Business of fair volume, considering the limited spot offerings. Buyers holding off as much as possible, awaiting arrivals of new crop fruit.
Prunes, 3 1/2 @ 4c.
Apricots, boxed, 10 1/2 @ 14c; bags, 10 @ 12c.
Peaches, unpeeled, 8 1/2 @ 10 1/2c; peeled, 12 @ 16c.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

CLEARING ATTACHMENT FOR HARROWS.—No. 702,071. June 10, 1902. N. Paulsen, Jolon, Cal. This invention is designed to raise harrow sections so as to clear the teeth from weeds or other obstructions which may be entangled in the teeth or to clear it of fixed obstructions over which it is desirable to pass. It consists of revolvable wheeled segments journaled upon the harrow frame and so disposed that the semi-circular portion of the segment is normally above the harrow frame while the teeth of the latter are working in the ground. Means are provided for turning the segment so that the semi-circular portion will revolve upon the ground and in so doing lift the harrow bodily above the surface. The harrow is again dropped with its teeth in the ground as soon as the semi-circular portion of the wheels or segments have been turned upward to their normal position.

FRUIT GRADER.—No. 703,887. July 1, 1902. W. C. Anderson, San Jose, Cal. Assigned to Anderson-Barngrover Mfg. Co. San Jose, Cal. This invention is particularly designed for the separation of prunes into the various grades which are recognized as standard upon the market, and is adapted to provide a machine of the greatest possible capacity and efficiency. It consists in the combination in a fruit grading and classifying apparatus of grading screens, fixed, downwardly divergent, transversely disposed surfaces centrally beneath the screens, transversely hinged dividers co-acting with said surfaces to mingle or divert the products of contiguous screens; longitudinally divided bins and longitudinally hinged tilting boards, turnable to receive the blended product and divert it to the bins on either side.

THRESHING MACHINES.—No. 703,061. June 24, 1902. G. W. Haines, Stockton, Cal., assigned to Houser & Haines Mfg. Co. of same place. This invention relates to improvements in that class of machines known as "combined harvesters," in which a threshing machine is mounted upon bearing and steering wheels and has a header attachment projecting from one side by which the grain is cut, means for transmitting the grain and delivering it to a feed mechanism upon the threshing machine, which in turn supplies the threshing cylinder, and means in the rear of said cylinder for transporting and separating the straw, grain and chaff; this mechanism all being driven by power derived from the rotation of the bearing wheels of the threshing machine as it travels over the ground.

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THE STOCK YARD.

The Cattle Business in California.

By T. H. RAMSAY, manager of Antelope Ranch, Red Bluff, in the Sacramento Bes.

The cattle business in California offers many advantages for profit in its varied lines at this time with every reason to believe the prosperous condition will continue for some time to come. The prices of beef have been exceptionally high for several years, having attained a higher range than known for years—9 and 10 cents per pound on the farm having been paid by dealers in San Francisco. It is possible we may have to accept lower figures than above named, but there is a large margin for profit below still remaining, considering that we have a climate in which cattle can make their own way through the winter with little or no feed, depending solely on the range for support. It is not unusual to have steers weigh from 1300 to 1500 pounds when from two and a half to three years of age, without any feeding other than as above mentioned.

There are few States where such conditions exist, and all we have to do is to combine some common sense with these naturally favorable conditions in the matter of breeding in order to attain very satisfactory results. Our Eastern neighbors are greatly in advance of us in this regard; but it is pleasing to note that our own cattle-raisers are becoming more interested in this matter; and it is self-evident that the results will prove the wisdom of so doing.

A glance over the list of prices obtained at the several auction sales of fine beef stock held at the International Stock Show at Chicago recently, verifies the above-mentioned statement regarding interest taken by Eastern breeders. They are quite willing to pay \$400 to \$500 for a good sire, while in our own State it has been the custom to look for a \$50 or \$75 animal.

As to the best breeds of beef, much has been written, and there is great diversity of opinion on the subject. The two leading breeds are the Durham and Hereford; and in the selection of either, one will not go amiss; nor in fact in combining the two. The Herefords seem to do better than the Durhams where feed is scarce and much traveling has to be done to get it; in fact, are becoming general favorites under all conditions, and the infusion of some of this blood always shows an improvement in the herd. They mature early and are very sure breeders, making the percentage of increase larger than in some other breeds; uniformity of markings is another advantage this breed possesses, all tending to make the Herefords much sought after for beef purposes.

Whether it be Durhams or Herefords, the best sires possible should be secured, without too great regard for the price, as it will soon repay the breeder in the improvement in the herd.

Many of those who have brought the Arizonas here have not been pleased with the results, finding it necessary to hold them two years in order to have them fatten sufficiently to put on the market with any degree of profit; and the general conclusion reached is that the native yearling is as cheap at \$25 as a two or three-year-old Arizona at \$20. It is not the intention to claim that all Arizona cattle are as worthless as above suggested, for where breeding has been judiciously done a marked improvement is noticeable in the Arizona herds. But as a class, speaking in general terms, the Arizonas are very inferior to the native California cattle.

One particular advantage which northern California offers is the fact that a drouth has never been known in this part of the State. The present season is no exception, for while the southern part of the State has been crying for rain, we of the north have abundance of feed and the cattle are in good strong condition.

THE DAIRY.—Another branch of the cattle business worthy of attention in our State is dairying, and it is attract-

ing a great many by reason of the profit to be realized from it. It requires closer attention, more experience and better judgment than does the raising of cattle for beef, as there are so many details which must be looked after. Under the right conditions, however, especially in the Sacramento valley, or other California valleys where alfalfa can be raised, without which it is difficult to conduct a dairy with as much profit through our long summer seasons.

HOLSTEIN-FRIESIANS.—We consider the Holstein-Friesians far superior to other breeds for the dairy, unless the location of the dairy should be in the hilly or more mountainous regions, when in such case we would favor smaller breeds, such as the milking strains of Durhams, the Jerseys or the Guernseys, in the order named. The Holstein is what we may call an all-around breed, excelling in milk production, and superior for veal and beef production to other breeds. The steers of this breed can easily be made to weigh from 1400 to 1600 pounds when three years old. It is true that to turn on to the range they are not as desirable as the beef strains mentioned in the fore part of this article, but connected with the dairy, where the calf is brought up on skim milk and afterwards allowed to run on reasonably good feed until maturity, the results are very satisfactory.

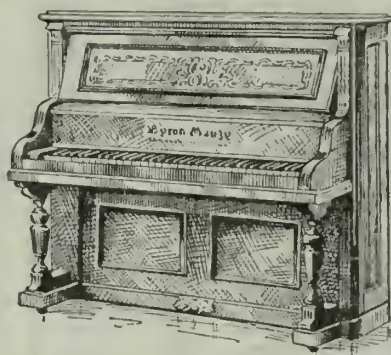
It is a fact that this breed possesses great constitutional vigor and vital force; elements which must be considered in cattle as well as horses. A milch cow under the strain of enormous production is much similar to a race horse attempting to break a record, and they must have constitution to continue as a profitable factor in the dairy. It is noticeable that the calves of this breed being fed on skim milk are more vigorous than those of other breeds. Think of a cow producing close to thirty pounds of butter in seven days, but such is the recent achievement of a number of this family, by the cow Mercedes Julip's Pieterje No. 39480, who produced 584 pounds of milk containing 23.4859 pounds of butter fat, equivalent to 29 pounds 5.7 ounces of butter.

Cows.—The practice of testing cows in order to ascertain their production in a given time has not been given very great attention in this State, but with the inauguration of the dairy school at our State University it is hoped that the breeders of the State will adopt this plan, which is widely resorted to throughout the Eastern States. In order to conduct a dairy profitably one should know what each cow produces, as he is then enabled to weed out all animals below a certain standard.

In looking over the respective records made in a herd of Holstein-Friesian cattle in the Sacramento Valley, we find a 13-year-old cow who gave 13,225 pounds of milk in ten months and twenty-five days—average percentage of fat 3.1, equivalent to 596 pounds of butter. Another in nine months gave 5853 pounds of milk, the average percentage of butter fat being 4.42, equivalent to 321.5 pounds of butter. Another two-and-a-half-year-old heifer, with first calf, produced in twelve months 8796 pounds of milk, with an average percentage of butter fat of 3.74, equivalent to 511 pounds of butter. A seven-year-old cow produced in eleven months and eight days 11,316 pounds of milk—average percentage of butter fat 4.45, equivalent to 488 pounds of butter.

A glance at the above figures serves to convince the reader that the Holstein-Friesians are good producers. There is a prevailing feeling among certain ones that while they give large quantities of milk it is of such poor quality that results are not satisfactory from a butter standpoint. This is an erroneous idea, for while such may have been the case years ago, the breed has been so improved by judicious breeding that we now find the combination of quantity and quality in this breed.

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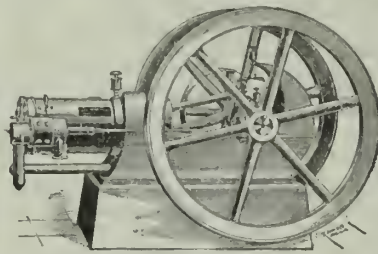
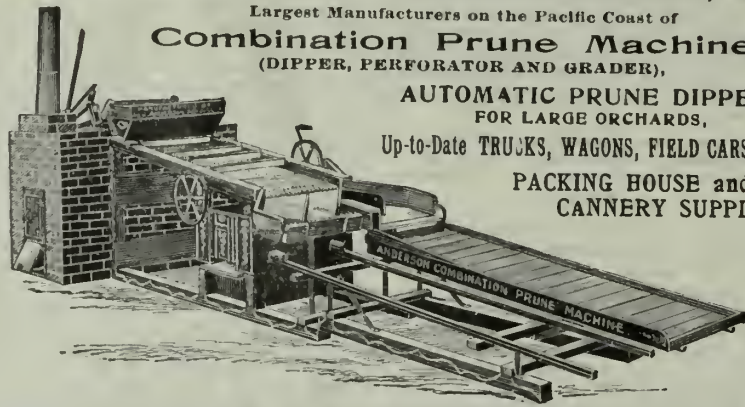
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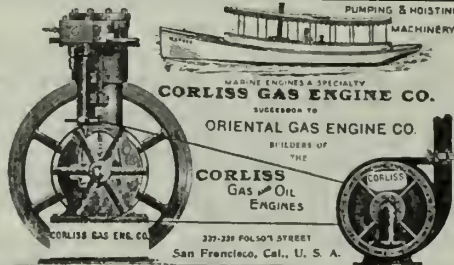
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New Patents.

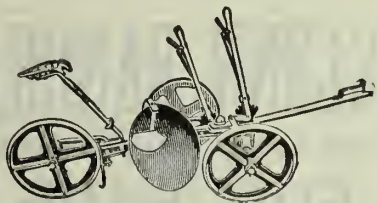
DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING JUNE 24, 1902.

703,037.—RAILROAD SWITCH—W. J. Bell, Los Angeles, Cal.
703,113.—BOTTLE STOPPER—H. A. Clark, S. F.
703,057.—INDICATOR—L. F. Graham, San Jose, Cal.
703,061.—THRESHING—G. W. Haines, Stockton, Cal.
703,343.—TRAIN ORDER BOX—I. G. Hoag, Los Angeles, Cal.
703,344.—MORTAR BED—J. M. Hollaway, Santa Barbara, Cal.
702,951.—THILL COUPLING—T. J. Hubbell, Los Angeles, Cal.
702,956.—SLUICE BOX—F. M. Johnson, S. F.
703,280.—BICYCLE STAND—L. H. Knoche, San Jose, Cal.
703,132.—STELLAR COMPASS—R. T. Lawless, Alameda, Cal.
702,974.—LOG TURNER—W. L. Leland, Sisson, Cal.
703,147.—LETTER BOX—T. C. McLin, Seattle, Wash.
702,988.—CALENDAR—Florence M. Nace, S. F.
703,084.—ORE SEPARATOR—C. C. Pratt, Portland, Or.
703,327.—ROAD OILING MACHINE—T. F. White, Chino, Cal.
703,363.—WASHING MACHINE—J. Woerndl, Frances, Wash.

FOR THE WEEK ENDING JULY 1, 1902.

703,751.—GARMENT—W. P. C. Adams, Olympia, Wash.
703,887.—FRUIT GRADER—W. C. Anderson, San Jose, Cal.
703,691.—LOG REGISTER—W. B. Armstrong, S. F.
703,519.—RACKET—A. Becker, Seattle, Wash.
703,755.—TIE PLATING MACHINE—G. L. Bender, S. F.
703,952.—CAPPING MACHINE—L. J. Rorie, S. F.
703,533.—KILN—Butler & Kunze, S. F.
703,762.—VENTILATOR—Carpenter & Baker, Los Angeles, Cal.
703,694.—AMALGAMATOR—J. V. Coleman, S. F.
703,558.—PUZZLE—P. F. De Ford, Pasadena, Cal.
703,781.—SALES BOOK—C. E. Frishie, Oakland, Cal.
703,571.—PLOW—A. K. Goodrich, S. F.
703,916.—FRUIT CLEANER—J. T. Haley, Alhambra, Cal.
703,927.—LOCK—C. S. Huntington, Los Angeles, Cal.
703,597.—COMB CLEANER—S. L. Kistler, Los Angeles, Cal.
703,706.—OIL BURNER—J. A. Meyer, S. F.
703,443.—SPIKE PULLER—N. F. Murphy, Bakersfield, Cal.
703,817.—DREDGER—R. A. Perry, S. F.
703,461.—ORE CRUSHER—A. J. Petter, S. F.
703,823.—UMBRELLA DRIP CUP—P. W. Pray, S. F.
703,824.—OIL FEEDER—J. C. Quinn, Port Costa, Cal.
703,816.—SASH HOLDER—W. M. Reedy, Spokane, Wash.
703,742.—CLOTHES HOOK—C. Salmond, S. F.
703,852.—CORSET—Nettie Temple, Stockton, Cal.
703,853.—BILL CARRYING DEVICE—A. W. Thierhoff, Redding, Cal.
703,875.—STORAGE BATTERIES—W. E. Winship, S. F.
703,877.—GATE—B. Wolverton, Portland, Or.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

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ON THE ROAD.

In the Sacramento Valley.

Written for the PACIFIC RURAL PRESS by F. P. COOK.

PLEASANT TO THE VIEW.—In a trip up the west side of the Sacramento valley, though most of the land is given to grain raising, every once in a while a nice little California orchard or vineyard comes into view.

NEW WAREHOUSES.—At Arbuckle, the new grain warehouse of Balfour & Garette has about three-quarters the storage capacity of the two old ones torn down. George W. Gregory, previously a farmer, is the reputed owner of a new grain warehouse across the railway from that of Balfour & Garette. It is 64x300 feet on the ground, and its capacity is given as 6000 tons. They are both built of wood. Two new railway switches have been put in.

A new grain warehouse, 50x400 feet, is building at Delavan, for E. J. DePue; capacity 75,000 sacks.

MORE PAPERS, LESS DRINK.—John Boggs, of Colusa, when he was living, used to take many papers. Twice a week a bundle of them went to each ranch. He said he found his men were more contented and drank less when they had plenty to read; and he considered the money he paid for newspapers a good investment. Which story of John Boggs is not new in Colusa county.

INCREASING ST. AMERIOSE.—The stand of St. Ambrose apricots is being increased in the Yolo orchard. The variety ripens slowly and stands shipment well.

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FRUIT AT ORLAND.—The Orland people are getting ready to call attention to their section as a desirable one for the creation of orchards of orange and other fruit trees with surface irrigation. They will have the advantage of being able to avoid many of the drawbacks which attend pioneers in that line of enterprise.

ASSOCIATION AIDS.—The Association of Retail Clerks and Merchants in Chico is doing much to bring about improvements in that beautiful but too

prosperous and contented town. They have already scored several important successes.

AT BIGGS.—A handsome new loading shed and office has been built by the Southern Pacific Railroad Company at Biggs, for handling fruit.

FENCE WIRE TELEPHONES are rapidly becoming the popular thing in and around Davisville. They seem likely to take the country and all the people in it.

WATER-BEARING GRAVEL.—The "oldest inhabitants" and some others in the northwestern corner of Butte county claim that the showing in wells proves that the magnificently productive county in which is located Chico and some other towns, is underlaid at a depth of about 15 feet with a strata of water-bearing gravel some 25 feet through. What is meant is easily understood by one who has been down in a water mine near Pomona or elsewhere in the region between Riverside and Pasadena.

With a deep top layer of alluvial soil underlain by another deep one of gravel traversed by an underground river, it is no wonder that Chico and vicinity produces trees of an almost semitropical luxuriance. The same sort of geological formation with less top soil is claimed as the basis of their prosperity at certain points in Tehama county.



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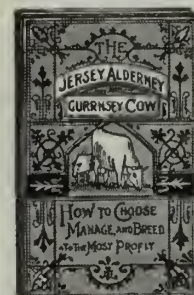
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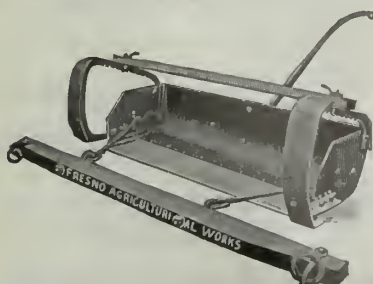
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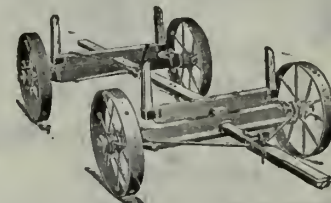
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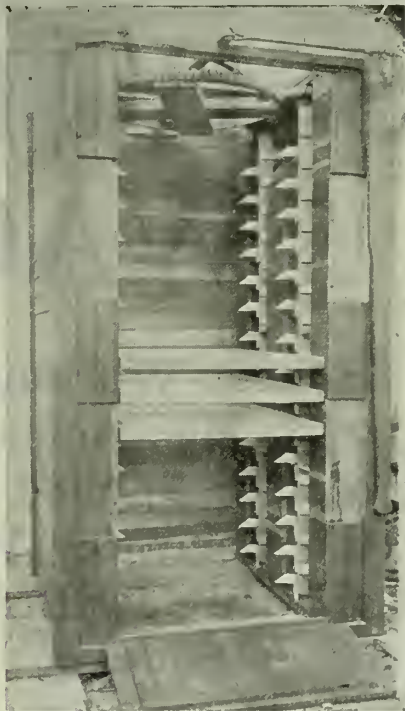
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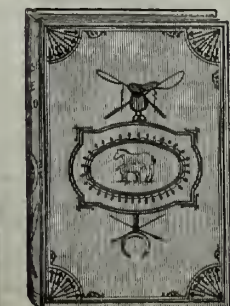
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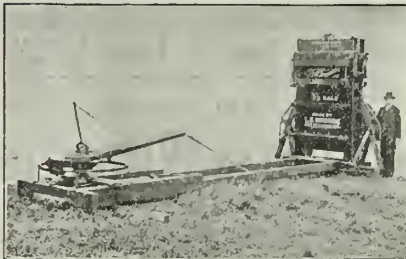
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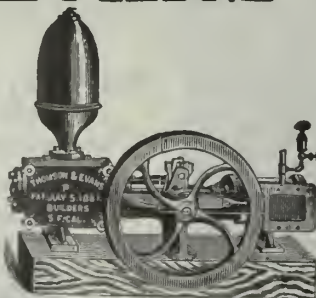
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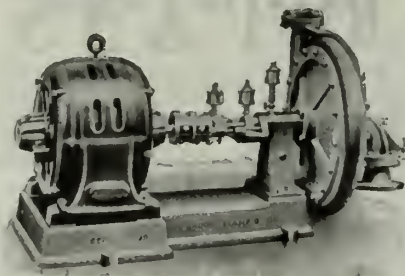


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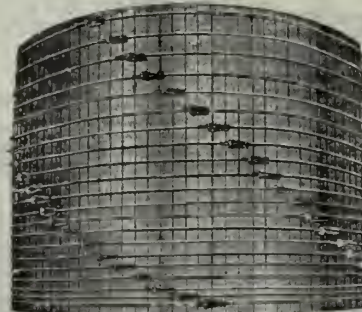
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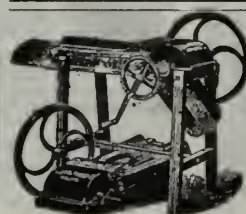
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 4.

SAN FRANCISCO, SATURDAY, JULY 26, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Fruit Trees and Alkali.

Years ago an old friend to whom we were putting some questions about what he had observed of the effect of alkali in the soil on fruit trees replied: "I have come to the conclusion that, though I might select certain fruit trees for alkali soil, I never would select alkali soil for fruit trees." It is probably true, as a rule, that for commercial planting one will save much vexation, disappointment and loss if he is successful in keeping away from alkali. Still, the subject of the comparative tolerance of alkali by different fruit trees is a matter of much horticultural importance. We find data on this subject in a University Bulletin recently written by Dr. R. H. Loughridge of Berkeley, which will serve to emphasize this point.

As readers have, perhaps, already noticed in our references to the subject, Dr. Hilgard and his staff are endeavoring to fix the limit of endurance of alkali for as many useful plants as possible, and for comparative purposes the comparisons are made on the basis of so many tons in the first 4 feet of the soil, calculated on the analysis of a certain amount of the soil of each foot separately. Observations are made of the behavior of all the trees which can be found growing on the soil represented by the analysis. The following are some of the conclusions drawn from Dr. Loughridge's investigations. The apple tree is quite sensitive and the effect on the foliage is very marked. Apricots, as shown by one of the pictures on this page, also strongly resent alkali. The differences between the two adjacent trees—one on good soil, the other on alkali—were very marked in the greater height and full foliage, large leaves and vigorous growth, in the one, and the thinner foliage, smaller



Lemon Orchard Affected by Alkali; Before Deep Irrigation.



The Same Orchard After Alkali was Driven Out by Deep Irrigation, Followed by Cultivation.

and blighted leaves, new leaves in clusters at end of limb, and evident poor health, in the other; some twigs had lost their leaves entirely. Olives, oranges, pears are all rather tolerant of alkali, while the peach is very sensitive to it. The myrobolan root helps trees considerably, for prunes upon it do well, while on common plum or peach roots they fail.

The behavior of the lemon trees shown in the pictures is quite significant. The tree is apparently the most rebellious of all fruit trees in alkali, but the process of washing down the alkali by free use of sweet water, where the soil is free and deep to carry it down, works very clear relief. The trees shown are in an orchard near La Mirada, Los Angeles county. In one part of the tract the trees were doing well, the soil showing only comparatively small amounts of alkali salts. In another the trees were stunted, and an examination showed no signs of disease, the trouble being evidently due to the alkali. In the lower part of the orchard, at the end of the irrigation furrow, where water was caught from run-off during the past five or six years, thus permitting the alkali to accumulate, the trees have during the past year shown signs of disease, and many have died. The alkali in this land is much in excess of that where the trees were merely stunted, thus indicating this excess as the cause of trouble. By a system of the manager, subirrigation caused water to dissolve the salt and carry it deeply into the ground, out of reach of the feeding roots of the trees, its rise to the surface being prevented by cultivation of the soil. The result appeared in the greatly improved condition of the trees, which in eight or ten months after this treatment seem to have almost recovered their vigor.



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Apricot Trees at the University Substation at Tulare—With and Without Alkali.

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E. J. WICKSON. Horticultural Editor

San Francisco, July 26, 1902.

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The Week.

Speculators in wheat futures have succeeded in slightly bearing values for options the past week, but much of the loss had been recovered at the close, and spot wheat is firmer than a week ago, with better prospects of prices hardening than declining in the next few months. Only a part cargo of about 650 tons cleared this week, bound for United Kingdom. The balance of the cargo, nearly 2900 tons, was barley. Some of this cereal is going afloat by steamer, being wanted abroad before sailing vessels can get it there. Barley values have been inclining upward. Some foreign buyers and the Big Four have locked horns on local ground, and in the struggle the growers are not for the time being losing any money. Let the good work go on. The oat market looked up a little for a day or two on the statement from Uncle Sam that he wanted 2000 tons, but he changed his mind, leaving the market in its previous dead calm. Corn is inactive and is neither lower nor higher here than when the Chicago corner, now a thing of the past, was having full swing. Hay has been coming forward just a little too freely, but its good average quality has prevented prices from declining materially. Millstuffs are high as ever, and it looks as though they were cornered for the present. Dealers are talking up white beans and are endeavoring to bear prices of colored; as could be readily inferred, they are carrying more of the former than of the latter kind. Beef and mutton are commanding as good money as for some weeks past. Hogs are all right just now, sold this week up to 7 cents a pound on the hoof. Handlers say hog growers are getting wealthier and butchers poorer every day. This is better than to have it the other way, although poor butchers are not seen hovering around these parts; they are probably in the mountains. Butter values have been again marked up and the article is in improved demand, tasting better than when cheaper. Cheese market is firm and is not likely to be soon lower. Eggs are bringing better figures and still higher values are looked for soon. Poultry was in fair demand, bringing fully as good prices as last quoted, but most buyers wanted chickens, the larger and fatter the better. Potatoes have dragged badly most of the week, but reduced prices are expected to soon bring forth shipping orders. Onions have been in fair request, values ruling steady. Tree fruits of reasonable kinds were in

good supply and prices low enough for any consumer. Berries were in lighter stock and higher. Grapes were not plentiful; a few black arrived from Arizona and some Fontainebleu from Vacaville, both bringing good prices. Market for citrus fruit is easier despite warm weather. In dried fruits apricots are having the call; other varieties will come in for attention later. Some of the dealers sold more July apricots than they are able to secure at their figures, and they are squirming to get out of the woods. Market for almonds and walnuts shows firmness, but not much doing. The Davisville and Brentwood associations have called for bids on their almond crops, to be opened Saturday, the 26th. Hops are held stiffly, but buyers are not grabbing them at top figures. Wool is closely sold up; more choice could be readily placed. Honey is offering in only a moderate way and is held above the views of big buyers.

Supplementary and confirmatory of the special report which we published in the PACIFIC RURAL PRESS of July 12 comes a dispatch from Paul Masson, a prominent fruit grower of the Santa Clara valley, who is now in France, stating that the French prune crop has been entirely destroyed by late cold rains and hail. Earlier in the season the prospects were for a short crop in France. Now, according to Mr. Masson, the yield will hardly be worth marketing. The result in California comes quickly. It is reported from San Jose that twenty-one carloads sold for Europe from Friday to Tuesday last, not of new crop, but prunes on hand. The total number of cars sold for export since last fall is about 400. There has never been such a demand in Europe for our fruit as at present, and it is believed the demand will clean up the prunes on hand before the new crop comes in. Offers for the new crop on a 2½-cent basis have been refused. The prune isn't the dearest cock in the fruit pit after all.

The new oleomargarine law went into effect July 1, and now this imitation butter must be white. Singularly enough, there arises a danger to all genuine butter which is too pallid because it is suspected of being bogus. This is a phase of the matter not widely foreseen, but it is plainly of moment and is attracting the attention of the trade. We have just received a letter from Mr. Charles Y. Knight of Chicago, secretary of the National Dairy Union, asking us to inform readers of the PACIFIC RURAL PRESS that unless they want their butter sold as packing stock they must color it so as to resemble June butter. Otherwise consumers in the cities, because of the repeated misrepresentations made to them, will believe it to be oleomargarine and refuse to buy it. If uncolored or white butter is made in future, it will entirely counteract the effects of the new law, because if people become accustomed to eating white, butter they will easily be deceived by oleomargarine swindles. The future of the butter business seems to depend upon keeping up the color standard of butter to distinguish it from oleomargarine.

The proposition of a California ostrich grower, Mr. Edward Cawston of Pasadena, to furnish the New York poultry trade with young and tender ostriches in quantities to suit, is unique, and it is not wonderful that they ask to know more about the edibility of the ostrich before inviting consignments. The popular conception of ostrich flesh is a trifle against the substance, it must be admitted. That the framework surrounding the stomach of an ostrich would prove tractable under ordinary human digestive powers needs demonstration, in view of the state of the public mind. Evidently Mr. Cawston has assurance on the subject, for he wrote to a New York firm as follows:

I would like to quote you prices on ostrich eggs and also learn what you would pay for a carload of dry-picked ostriches. These birds are spring ostriches and weigh 100 pounds apiece.

If ostrich meat and eggs commend themselves to the public taste, there are possibilities in the business which defy measure. A single egg would furnish an omelet for a large family, and it could be so strikingly served in the halves of the shell neatly sawn asunder. A single dry-picked 100-pound ostrich in the basement of a capacious boiler, with plumbing arrangements for a continuous inflow

of hot water and outflow of product, could supply a large caravansary with chicken soup for a month. But why attempt to picture possibilities which are illimitable! After California has established her export ostrich business and thus retaliated upon Eastern chicken dealers for swamping the local markets with old fashioned poultry, no doubt canned ostrich will be provided for, and if there is poetic justice in the agricultural world it will consist in getting the flesh of an ostrich which has flourished upon castoff tinware itself safely ensconced in shining tin with ornithological labels to suit the case. It is one of the most elevating thoughts which has recently occurred to us. Even the ostrich himself cannot kick at it.

QUERIES AND REPLIES.

Rose Mildew and Apple Trouble.

TO THE EDITOR:—Inclosed you will find a small branch taken from one of my rose bushes. When planted it seemed healthy and was quite thrifty until this season. I had about a dozen all told. A lady sent me a pretty monthly rose and when I planted it I noticed it did not look healthy. There was a grayish substance on the leaves, and it has communicated it to every bush in the yard. I had five running roses planted this spring and already they have begun to show signs of the same disease. I have tried sulphur, soot, kerosene and water, soapsuds, etc., but they do no good. What is it, and what would you recommend to destroy it?

I also send a twig from an apple tree that has never done very well. The leaves are very small and the twigs die back from the end. The leaves near the body are large and thrifty.—READER, Siskiyou county.

The rose specimen which you send is badly affected with rose mildew (*Sphaerotheca pannosa*). This fungus is usually checked in its growth by the use of sulphur, but where sulphur is not effective the Bordeaux mixture should be tried. In the drier parts of the State this fungus assumed a more powdery form and does not have the smell of mildew so fully developed as is the case with your specimen. Conditions seem to be very favorable with you for the development of this fungus. The trouble with the apple tree is not apparent from the specimens, as there seems to be no insect or disease upon it. There is probably something the matter with the soil, or the moisture supply—either too much or too little water, as this is generally the cause of die-back and poor growth towards the ends of the branches.

California Lotus, Brome Grass, Etc.

TO THE EDITOR:—I send a plant for which I would like a description, name and habits of growth, etc. I found it here on the place we have purchased, and it seems to be peculiarly suited to dry ground. Cattle eat it readily; also hogs. Can it be used here as a forage plant successfully? Can you tell me if *Bromus inermis* will do well on this hill land? In Washington it is a grand success, but land here is different. We wish to seed this place to some sort of grass that will be more beneficial than the present yield of grass, wild clover and weeds. Why do my tomato vines, which are healthy and bloom very freely, lose the bloom without setting fruit?—NEW HOME MAKER, Santa Cruz.

That forage plant of which you enclose specimen is identified by Mr. Davy of the University botanical department, who has given much attention to the study of native forage plants, to be the California lotus, or Dakota vetch (*Lotus Americanus*). This is an annual plant of late growth and very deep rooting habit, and it proved of very great value to California stockmen during the recent dry seasons, and it has been quite highly commended by farmers in parts of the State where forage plants are at a premium. Mr. Davy has traced the roots of this plant to a depth of over 7 feet. It is probable that the seed cannot be obtained in the market because the pods burst quickly when the seed is ripe and it is very difficult to gather. This plant is common in the prairie region, as well as in California, and Smith says "cattle and sheep become rolling fat on pastures where this vetch abounds. It is one of the most promising native forage plants and should be given an extended trial in cultivation, being particularly adapted to the drier soils."

Hungarian brome grass is one of the best grasses recently introduced to this State, but it will not live through the summer in the driest situations. Where there is a little moisture retained in the soil, or

where some moisture can be gained from coast influences the plant will maintain its life in the root and start very early in the fall and make satisfactory winter growth.

The falling of blossoms of the tomato early in the season is probably due to the fact that the plants are growing too vigorously. Perhaps you are giving them too much irrigation. As soon as the growth becomes more matured and the tissues a little more matured the blossoms will set and fruit will appear.

Pear Dropping Not a Sign of Pear Blight.

TO THE EDITOR:—A fruit grower near here who has an orchard of pears of several acres has complained to me about the fruit falling from the trees. Early in the spring he had prospect of an excellent crop of pears, but there is very little left now. He says he can see nothing the matter with the trees, and he hardly knows what is the cause of his loss. He thinks it may be due to pear blight.—L. W. TAYLOR, Suisun.

The dropping of pears and of other fruits is a very obscure matter, and adequate causes have not yet been demonstrated. No doubt a great many pears drop because of the lack of pollination in the blossom. Lack of pollination, you know, prevents the seed bearing, and there seems to be a tendency in nature to cast off fruits which are not properly started on the road to seed bearing, but this will not account for all the fruit dropping. It is a matter which requires careful investigation. It affects nearly all fruits to a greater or less extent. Although growers have notions about the causes, no demonstration has yet been reached. Your friend may be sure, however, of one thing, that if he sees nothing the matter with the foliage and the young wood he has no pear blight. This disease makes itself very manifest by the blackening and dying back of the young wood, leaves and fruit, and the fruit that is affected does not drop, but simply hangs on the tree and looks as though fire had struck it. This is quite different from another blackening of the fruit which comes in the form of black patches or scabs. That is called the "pear scab," and does not burn back the leaves and twigs like the pear blight does. Apparently your friend has none of these things, but has healthy trees, with the dropping of fruit from some cause or causes which cannot be explained.

An Obscure Case.

TO THE EDITOR:—My orchard of prune trees, five years old, well loaded with prunes, has some trees dead and others nearly dead. Can you give me a remedy, as I fear I may lose the whole orchard? The trees seem to be affected by some insect which works just under the bark on the body of the tree near the ground, working on the inner part of the bark until it has been cut around the tree, and, of course, that kills the tree. The outside of the bark does not show any signs of being affected. Some trees that look healthy, on examining I find affected. If I can discover a remedy, I may save them.—GROWER, Parlier.

It is impossible, without having opportunity to examine the trees, to give any very definite opinion as to what has caused the die-back and death which you describe. It is probable that the insect which you mention as working in the inner bark is not the cause of the trouble, but has come on after the bark has died. Unless careful examination of the exterior bark should show the presence of minute insects like the San Jose scale, we should venture the opinion that the failure of the trees was due to something inhospitable in the soil—either that alkali had arisen and injured their roots, or that water standing too high in the soil had accomplished the same effect. It is true, also, that exactly the same results are produced by heat and dryness in the soil; both too much water and too much dryness, resulting in the death of the root-hairs and the subsequent dying back and failure of the tree itself. These observations must be verified by examination of the trees themselves and of the soil in which they are growing, and without that one can not give very definite information as to the cause of the trouble.

Alfalfa on the Sonoma Coast.

TO THE EDITOR:—Can you tell me the prospect of an alfalfa crop in northern Sonoma county? With considerable fog, will it grow without irrigation? I have good, rich soil and do not care to experiment without some chance of success.—READER, Cazadero.

Alfalfa is not as a rule successful very near the up-

per coast, because the summer temperature is not high enough to secure a good growth, nor does it succeed well on uplands, because the soil should be deep and rather loose, as well as rich. On such soils it is satisfactory for one or two growths without irrigation, but there is always danger that gophers will multiply with great rapidity where there is no water available for occasionally drowning them out. Our impression is that success would be somewhat doubtful and that it might be better for you to seed down the piece with Australian rye grass or mesquite, which are usually found more satisfactory than alfalfa so near the coast.

Cherry Slug.

TO THE EDITOR:—I have sent you a sample of a small black slug and the cherry leaves that they have worked on, eating up the tissue and leaving the skeleton of the leaf. Some of the trees haven't a green leaf on them. They look as though a fire had passed through them, and it ruins the fruit. Can you give me a remedy that will exterminate them? I am afraid I will lose next year's crop if I don't get rid of them.—C. E. BOWMAN, Corralitos.

The insect which is doing you injury is called the cherry slug, and if the leaves are pretty well destroyed there is little that you can now do. If, however, there are still some leaves and insects feeding on them, you can kill them by spraying with Paris green—one pound to 300 gallons of water. The cherry tree will not stand Paris green as strong as the apple or pear. If the work is about done, you will have to leave the treatment until a new brood of insects appears. If you only have a very few trees, the slugs can be killed by blowing or throwing fine road dust upon the leaves. This settles on the slimy insect and destroys it.

Growing Orris Root.

TO THE EDITOR:—Is any one growing Florentine iris (or orris root of commerce)? If not, where can I obtain it? Do you think it possible or necessary to hybridize with our native iris, which grows all over the State?—READER, San Francisco.

The true Florentine iris grows readily in the University garden at Berkeley and seems to be adapted to this climate. It is altogether probable that it would hybridize with the native iris, but what would be gained by it would be a question with the propagator. Presumably, as this root is suited for commercial use and is recognized as such, it would be better to undertake propagation of the true kind than to grow hybrids, unless one has a definite idea of improvements to be accomplished.

Alfalfa or Bermuda.

TO THE EDITOR:—I have just purchased forty acres of land and have been advised to ask you for some advice as to laying it out. The hardpan seem to be about 3 feet from the surface. The soil is sandy loam. There are two acres of two-year-old peach trees which were blasted for and to-day seems very healthy. My main question is: Is such a place good for alfalfa or Bermuda grass?—READER, Fresno.

You can grow alfalfa successfully on the soil you speak of if attention enough is given to irrigation, so that the ground does not become saturated and hold water on top of the hardpan. If just enough is given at short intervals to keep the plant growing well it will be satisfactory and thrifty. You can grow Bermuda grass without any difficulty, but undoubtedly alfalfa would be better and it ought to do as well under the circumstances as the peach trees even though the latter had the advantage of blasting.

Cucumber and Melon Beetles.

TO THE EDITOR:—The insects which I send you are destroying my cucumber and melon vines. Having some strong and healthy vines yet, which they have done but little damage to, I kindly ask you if there is any remedy that can prevent this. If so, please answer through your columns.—A SUBSCRIBER, Suisun.

You send the two pests Diabrotica soror and trivittata, which are often associated in this work. They are rather hard to drive away or to poison. Try an ounce of Paris green thoroughly mixed with twenty ounces of flour and sprinkle it sparingly on the parts of the plants where the insects are usually found. This is the best offer we know off to poison them. Do not put it on the fruit. You may also try air-slaked lime into which you have stirred as much kerosene as it will take without getting mussy. Sometimes this will drive them away.

Cabbage Lice and Cabbage Worms.

TO THE EDITOR:—I have some cabbages that are growing finely and have commenced to head, but I see that there are a few lice on them and the worms are eating them quite badly. Will you please state in the PACIFIC RURAL PRESS a remedy for the above?—READER, Bend.

Soapsuds put on with a good deal of force with a force pump or plant syringe will knock out the lice. If you stir Paris green thoroughly into the soapsuds, one ounce to ten gallons of suds, and apply gently with a fine spray, it ought to take care of both lice and worms. Paris green is counted safe to use on cabbage because the head forms from the inside and cannot enclose the poison. All the poison will be on the outside leaves which are taken off in using.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 21, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Nearly normal weather conditions have prevailed during the week. Harvesting, threshing and hay baling are progressing, but there is still a scarcity of labor in some sections. A correspondent at Wheatland states that the yield of grain in that vicinity is far below expectations, but of good quality. Other sections report a heavy yield of wheat and barley, excellent in quality. Hops are doing well and a good crop is expected. Corn and sugar beets are making good growth. Melons are ripening. Grapes, late peaches, prunes and almonds are in good condition and give promise of heavy crops. Heavy shipments of prunes are being made from Guinda. Citrus fruits are doing well.

COAST AND BAY SECTIONS.

The weather has been warm and clear in most sections during the week, with frequent fogs along the coast. Harvesting and threshing are progressing. Wheat and barley are yielding good crops in the central and northern sections, and fair in some parts of the southern districts. It is reported that wheat has rusted badly in some parts of Lake county, and that the hay crop there is light. Beans are doing remarkably well and hops, corn and sugar beets are making good growth. The San Jose scale is damaging fruit in portions of the northern coast counties. Fruit picking and drying are progressing. Grapes continue in excellent condition. Citrus fruits and olives are thrifty.

SAN JOAQUIN VALLEY.

Clear, warm weather has prevailed during the week, but with cool nights. Harvesting and threshing are progressing rapidly. Grain is of good quality and in some sections the yield is much heavier than anticipated. Most of the grain is going to warehouses and shipments thus far have been light. Hay baling continues and a heavy crop is being stored or shipped. Corn is making good growth. Pasturage is drying up, but stock are still in good condition. Peaches are a little late in ripening, owing to cool nights, but there will be a good crop, excellent in quality. Other deciduous fruits are in good condition and picking and drying are progressing. Vineyards are in first-class condition and prospects are good for a heavy crop.

SOUTHERN CALIFORNIA.

The weather has continued warm and clear, with fogs along the coast. Crops are in fair condition. Sugar beets and corn will be lighter than was expected. Green feed is scarce, but stubble pasturage is plentiful. The water supply is low. Walnuts are dropping badly in some places. Apricots are nearly all gathered. They are of good quality, but yield is light. A good crop of melons is being gathered. Two carloads of lemons are being shipped daily from San Diego. Oranges are in good condition. The yield of honey is much below the average.

EUREKA SUMMARY.—Hay harvest well advanced and heavy crop assured. Second crop of berries abundant. Apples and prunes are heavy; the latter are dropping. Some fruit orchards in northern Humboldt county badly affected by conlin moth.

LOS ANGELES SUMMARY.—Warmer week; good for fruit drying. Apricot harvest now on; fruit unusually small. Help scarce, causing large loss of fruit. Early peaches ripening.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 23, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	.00	.22	.01	.07	62	50
Red Bluff.....	.00	.00	.00	.02	103	66
Sacramento.....	.00	.00	.00	.01	100	54
San Francisco.....	T	T	.00	.01	68	50
Fresno.....	.00	.00	.00	T	106	60
Independence.....	.00	.00	.03	.01	96	62
San Luis Obispo.....	.00	.00	.00	T	83	48
Los Angeles.....	.00	.00	.00	.01	83	58
San Diego.....	.00	.00	.00	T	70	60
Yuma.....	T	.10	.00	.14	108	70

THE DAIRY.

Selection of Cows.

By C. P. GOODRICH of Wisconsin, for the Patrons' Hand Book.

The men who attain the highest success in any business always use the implements or machines that are best adapted to their business.

The farmer who makes milk production his business is a dairyman, and he needs the best of dairy cows. The best dairy cows are those that will return the most value in milk for the food consumed. The dairy cow is a machine for converting the forage raised on the farm, and perhaps other foods, into money, by producing milk, butter and cheese.

For the patron of a creamery or maker of dairy butter, the best cow is the one that will produce the most butter fat in a year, for a given amount of feed. It is the same with the patron of a cheese factory.

SELECTIONS FROM ONE'S OWN HERD.—For the farmer who has a herd of cows, perhaps a sufficient number to stock his farm, his selection should commence with his own herd by weeding out and disposing of his poorest ones.

Many farmers, and, in fact, most of them, who are keeping cows, have some individuals in their herds that do not pay for their feed, and the owner does not know it. He has not taken the means to select out those of his herd that do pay a profit, from those that do not.

A cow has to be fed a year, for which she returns us what milk she gives in a year. The only way to tell how well she pays us is to weigh her milk every milking, or, at least, at frequent intervals, and test it with the Babcock test and find out how much butter fat she produces in a year.

Some may think this involves a great deal of labor, but, with things properly arranged, it requires but very little time. With a milk sheet properly ruled, and with the names or numbers of the cows, together with the days of the months, placed on it, and a pencil hanging to a string, and a spring balance, all conveniently located in the stable where the milking is done, the milkers will be able to record the amount of milk each cow gives at every milking with the expenditure of but a few seconds of time at each milking. Each sheet can be made out for one month. At the end of the month the figures can be footed up, and at the end of the year one can tell the exact amount of milk each cow has produced.

The testing should be done once or twice a month by testing one day's milk—both morning's and evening's milk—because the test of the milk is liable to vary from time to time, but a test at stated intervals—say the middle of each month—and, taking that for the average of the month, will approximate, at the end of the year, very closely indeed, to the actual amount of butter fat a cow produces during the year.

Now when the farmer knows, as he ought to know very closely, as any good business man would know, the value of the feed his cows consume and the value of the butter fat he furnishes to the creamery, he can readily know which cows are returning him a profit and which ones he is keeping at a loss.

It would seem that it ought not to require any argument to convince any man of the folly of keeping cows that did not pay in milk for the food they consumed, yet some men are constantly doing it and refuse to enlighten themselves as to which cows are boarding on them without paying for it.

I have in mind now a man whom I had been urging to take this means of finding out which cows in his herd were not paying for their keep, and he answered me by saying, "I won't do it. I'm afraid I should find too many poor cows, and if I should dispose of all that did not pay, then what should I do for cows?" Of course, argument is wasted on such a man and I said no more.

Some men think they know without weighing and testing the milk of the individual cows of the herd which are the best ones, but they can only guess at it, and are frequently grievously mistaken. I know this was the case with me. Before the Babcock test was invented, the best I could do was to weigh the milk, which I did once in a while, and thought I knew something of the value of the different cows.

As soon as Dr. Babcock brought out his milk test I bought one, and it revealed to me some startling facts. Some cows, which I had supposed were my best ones, I was glad to dispose of, while some that I had barely tolerated on my farm were really the most profitable ones.

A CASE IN POINT.—One instance I will relate: I had a large cow that was a hearty feeder, we called Whitie, which my hired man milked, and another medium size called Beauty, which I milked. The hired man used to say, when milking Whitie, when fresh and getting a large pail brimming full at a milking: "If you only had a whole herd of cows like Whitie, you would make lots of money." Then, as he looked at the scant half pailful that I got from my cow, he would say: "I don't see why you keep such a cow as Beauty is. It must be to look at; she don't give enough milk to pay."

But the Babcock test came, and I got some milk scales and went to work to weigh and test the

milk for a year. Whitie started with fifty pounds a day, but it soon began to drop off and, after a while, she began to fatten up and finally went dry some three months; and, notwithstanding her great pretensions to begin with, she gave but 6000 pounds during the year. Still the amount of milk was very good, but the Babcock test revealed a very disappointing fact. The test averaged but 3%, which made 180 pounds of butter fat, which would make 210 pounds of butter.

Beauty never gave over twenty-five pounds a day, but kept her flow so well that, at the end of the year, it footed up a little over 5000 pounds with an average test of 6.5%, which made 325 pounds of butter fat or 380 pounds of butter. She made 170 pounds more than Whitie on less feed.

Of course Whitie had to go when she came fresh again. The man who looked at nothing, when buying cows, but a large frame and an immense udder, that denoted a large quantity of milk at the time of purchase, bought her. But Beauty stayed on my farm for ten years after that, giving me net profit, above the cost of feed, of from \$35 to \$50 a year, besides leaving with me many of her descendants, which were excellent cows. When I sold her on account of age she did not bring much, but, after all, I thought I had good reason to be satisfied with her.

Had I kept Whitie a like number of years, her butter would probably, judging from that one year's record, have just about paid for her feed; and her female descendants would have stood a great chance of being inferior, as dairy cows, to Beauty's descendants. There is no question in my mind that Beauty, in those ten years, paid me at least \$400 more than Whitie, or a cow like her could have done.

SELECTING COWS TO BUY.—When one wishes to buy cows to take the place of some weeded out, or to increase his herd, or to start a new herd, a different problem presents itself. He cannot have the year's record, for the reason that those who have cows to sell have not kept a record of individual cows, or if they have, they have too much business sense to sell off their best cows. It is of no use to ask the seller which are his good cows, for he will tell you they are all good, and, besides, he does not know himself, because he has never made a yearly test. It is of but little use to see the cow milked and take a sample and test it. One can learn but very little from one milking what a cow will do for a year.

Therefore, there remains but one thing to do, and that is for the buyer to use his own judgment, being governed entirely by the form of the cow. There is a dairy type—a form which indicates dairy ability, which the close student of the dairy cow is able to recognize.

There are cows of dairy type and of good dairy performance in nearly all breeds, but they are found more nearly universal among the recognized dairy breeds, such as Guernseys, Jerseys and Holsteins, than among other breeds. There is occasionally one of dairy type, and a splendid performer found among some of the beef breeds, but they are exceptions to the general rule, and though good performers themselves, would not be very likely to transmit first-class dairy qualities to their offspring. So it is best to hunt among the dairy breeds, or grades of dairy breeds—those which have been bred and used through many generations solely for dairy purposes—when wishing to select dairy cows.

THE DAIRY FORM.—A good, competent judge, when he goes out to buy a cow, does not ask the owner, "Is she a good cow? How much milk will she give?" Or, "How much butter will she make?" But he looks her over carefully and makes up his mind whether or not she has the right form to be a good producer.

As far as the dairy form is concerned, there is not, in my opinion, different standards for different breeds. Not that the great producers of all breeds, or even of the same breed, are all shaped exactly alike, but all great performers, of all breeds, have certain characteristics alike, which distinguish them as dairy animals.

Now I do not claim that any man, even though he may be the very best judge, can with unerring certainty select a good dairy cow every time, for there may be some defect in the internal milk machinery, of which there is no outward evidence. But, after all, the form is the best guide that an expert judge can have.

It is a rather difficult thing to describe on paper the dairy form, but I will try as best I can to give my ideas about it.

The first thing to be looked at is the cow's head. She should have a broad forehead with large, full, mild, intelligent looking eyes, and have every indication of a strong brain with strong nervous force. Milk production, with the cow, is the result of nervous force, and this nervous force starts from the brain and runs along the spinal cord.

A strong, rugged backbone indicates that it encloses a large, strong spinal cord. Nerves branch off from this cord between each of the sections of the backbone; and the larger these nerves the more open are these sections, and farther apart are the ribs. This makes the dairy cow long bodied and having a rather loose and relaxed appearance.

The mouth should be large and the jaws strong and muscular, which indicates that she is a good

feeder. She should have great depth of body, showing that she has large capacity for handling and digesting the large amount of food that her strong jaws are able to eat. She should have a broad chest and large girth around the heart and plenty of lung capacity. She should have a broad, strong loin with hips quite wide apart, with the backbone rising quite high between them. This indicates large room for the organs of maternity.

The thighs should be thin and incurved on the back side, with great room between them, and the flank arched up high just in front of them. All this to give room for the large fine udder which she must have to be a great producer. The udder should extend well forward and well back, making a long connection with the body, and having four fairly good sized teats set on well apart. Large, full milk veins that carry the blood from the udder back to the heart through large "milk wells" or openings through the large walls of the chest are indications of a large flow of milk.

OTHER POINTS.—Some other points which good cows usually have, but not always, might be mentioned. These are the thin, slim neck; the clean, well cut up throat; the thin withers and the long tail.

A great many men when judging of a cow's dairy ability are guided almost entirely by the udder. If that is large and fine they think she must be a good cow, no matter what her form otherwise is. Of course a good udder usually goes with a good dairy form, but not always, and when it does not, the cow is either a partial or a total failure as a dairy cow.

A cow may have a large udder and give a good quantity of milk for a short time, but, if she has not a good dairy form, she has not the machinery to keep on filling her udder long enough to make her a profitable cow. More men have been deceived by a large udder than by anything else about a cow, because that was almost the only feature they looked at.

The buyer should never fail to examine carefully the udder of every cow he thinks of selecting, to see that it is sound, has no paralyzed quarters and gives milk easily and freely from all four of her teats.

Sometimes an otherwise excellent cow is rendered partially or totally worthless for the dairy because of a habit of leaking milk. This fault cannot always be detected unless the milk is seen to be leaking.

Another fault that some cows have is the habit of sucking other cows, or, worse still, of sucking themselves. My advice is never to buy such a cow under any circumstances if one can detect the fault.

FURTHER TEST OF COWS.—When one has selected and bought his cows in the manner I have described, if he is going to get as profitable a herd as possible, he must test them with the scales and Babcock test for a year. He will perhaps find that, although he may be one of the best judges of cows, he has got some unprofitable ones that will have to be discarded.

THE APIARY.

A California Power Honey Extractor.

The well-known California bee keeper, J. F. McIntyre of Ventura, has had in successful use for some time a power extractor of his own invention. It has eight pockets, each of which is capable of turning on its own pivot, and all eight revolve together around a common center shaft, to which they are connected by a suitable framework of gas pipe. Mr. E. R. Root has recently described the outfit and its operation in *Gleanings*, and we adapt the following from his writing: An inspection shows that the pockets are pivoted on the sides, on a vertical line, and all geared together with chains and sprockets. The average pockets, it will be remembered, are pivoted, or, rather, hinged, like a door, swinging both ways. When the combs are inserted in the extractor one of the handles at the top is revolved so that the baskets are placed inside of the shaft on which it revolves. The combs are inserted, water power is put on, and the honey is thrown out. While the machine is under full motion a lever is raised, releasing a catch, which permits the pockets that are now inside the center of revolution and out of balance to be thrown by centrifugal force to the other side, or outside of the vertical shafts or center of revolution. It is true that, at the moment of reversing, there is a slight shock, and one would think it would rack the whole machine, but the fact that it has been operating for years without any trouble from breaking down seems to indicate that the principle is not so far wrong. To build an extractor on this plan involves a larger expense than that required by the regular Cowan. It also necessitates a larger capacity—perhaps 18 inches in diameter—for the same number of pockets. But Mr. McIntyre argues that the work is performed more rapidly, because the extractor does not have to be stopped or even slowed down.

OPERATION.—But I wish to refer particularly to the action of power in throwing out honey from the combs. Mr. McIntyre showed me conclusively that ordinary hand turning of an extractor could not clean the combs of the beautiful, thick mountain sage honey as clean as can be done where plenty of power

is available. Mr. McIntyre has abundance of water from an irrigating flume some 60 or 75 feet above him. All he has to do is to open a valve to his water motor, and his extractor will instantly begin its rapid whirr. No one man, nor even two men, by hand power could ever turn a reel and keep it at the same high rotative speed that was maintained by this motor.

Another advantage of power is that one man can do the work of uncapping and extracting; for while he is uncapping the eight or ten combs, as the case may be, he lets the extractor spin. When the operator is about through uncapping about one-half the combs necessary to fill the pockets, he slips the lever and the machine automatically reverses itself, and the process of slinging honey begins instantly from the other sides. The extractor keeps on whirring while the rest of the combs to complete the set are being uncapped. When the machine is stopped and the combs are taken out they are not exactly dry, but they are clean.

I came away from the McIntyre apiary satisfied that in large apiaries, at least in localities such as California, Texas and Cuba, if one can afford it power is the thing. For the purpose of driving the extractor a gasoline motor would be the cheapest; but it does not allow of a variable speed except at great expense. We have, therefore, concluded that a small steam engine controlled by a throttle, and a small boiler, all things considered, for the average person would furnish the best power. Water power, of course, is the ideal, but where one is situated as is Mr. McIntyre there will be hundreds who will have to rely on steam.

An Interesting Study of Robbers.

W. W. McNeal, an Ohio bee student, has prepared for the American Bee Journal an interesting account of his observations on the behavior of robber bees toward their victims. The discussion arose upon the question, "Do robber bees sting the defenders of the hive they are trying to rob?" Robber bees do sting at such times, and with terrible effect, too. If this were not so, how is it they are so successful in over-running at times a good, normal colony? Surely the bees of the attacked colony are not intimidated by any superior force of numbers, and retreat before the robbers in their rush for the stores. This is not in the nature of the honey bee when she feels that her home is worth fighting for. When such a colony submits to the plundering of its combs, you may know that its fighting force has been swept away by the fierce onslaughts of those frenzied desperadoes.

THE CONFLICT.—There is something peculiar about the apparent ease with which robber bees will, in so many cases, get the better of a bee that opposes it in an endeavor to enter the hive. The robber is worked up to the very highest pitch of excitement and abandonment to an evil habit; the poison glands pour forth their fiery fluids more bountifully, and, the honey sac being almost perfectly in a state of depletion, it will be seen that she is in the very best possible fighting condition. But a robber bee will not use its sting for the mere pleasure of killing—that characterizes a villain in human form. There is a risk to run which she is not willing to take in any such way. I mean the risk of losing her sting. The danger of having it torn away is not so great when thrust into the body of another bee; but when the sting has penetrated sufficiently to kill outright the bee can not withdraw it easily, and I have often seen them crawling about upon the ground in front of the hive dragging the dead bee thereby.

DUELS.—Robbers will often bite and sting just a little a bee that has surrendered, in an effort to make her give up the last mite of honey, which may cause the bee to die in a short time. This, to me, is more plausible than that the captives, so to speak, join the victors in their own hive. When a robber has been seized by a fighting bee, and the two are buzzing so rapidly on the alighting board or ground in front of the hive that the eye can not determine what is actually being done at the time, the fact that one and quite often both of them have their mandibles fastened upon each other at the close convinces me that both were fighting. Sometimes they cease buzzing, and wrestle on the ground for the advantage. The mandibles hold a death grip while the two hindmost legs of each are dexterously used in an effort to prevent the other from getting into position to use its sting. The bee whose abdomen is distended the least of the two that are fighting usually succeeds in this and destroys the other. So soon as the fatal thrust of the sting has been effected the victorious bee will usually make an effort to break away; but the other will often cling by the mandibles till she is too weak to do this.

ASPECTS OF ROBBERS.—Evidence of a very conclusive nature may be had in cases where the contention is between a colony of Italian and black bees. The untrained eye then can easily separate the robbers from the regular inmates of the hive. But the experienced observer will not often be deceived by the maneuvers of robber bees. The sweet melody in the hum of a bee engaged in honest pursuits is so different from the loud, shrill notes of robbers that the ear alone may detect them. The bright, cheery color of honesty is soon swept away, being replaced by a

dirty, glassy, greased appearance in a short time, when a bee resigns itself to this evil habit. All Italian bees will, when they become aged, assume a darker color than they had when in younger life; but this shade of blackness that comes with waning vitality—vitality spent in honest toil—contrasts largely with the other, though the novice may be wholly unable to determine a robber by its color.

Upon approaching a hive—and I might say any hive, even its own—a robber bee will hover over the entrance, just out of reach of the guards, very much as a sparrow hawk will flutter above a certain spot in some grassy, weedy field when watching for a mouse.

THE RANGE.

The Ranges of Northwestern California.

From Bulletin No. 12, Bureau of Plant Industry of the United States Department of Agriculture, by J. BURTT DAVY of the University.

NO. 2.—RANGE DETERIORATION.

The amount of deterioration can not be measured by the actual amount of feed eaten, but increases with geometrical progression to an astonishing degree, determined by the number of useful plants left to ripen seed for the next year's crop. Looked at from this standpoint, it is evident that when an annual range begins to deteriorate the deterioration will continue at a rapid rate until checked by a change of method in management.

Stockmen all admit that overstocking is a bad practice, and condemn it; but each man has his own conception of what overstocking is, the number of acres required per head ranging all the way from three to twenty acres, varying somewhat, to be sure, according to the condition and situation of the range. Doubtless the point where the overstocking commences is determined, with most stockmen, by the condition of the stock, without regard to that of the range; few would realize that by running all the stock the range will carry they are actually overstocking—that is to say, seriously depleting the range and reducing the number of head which can be carried in future years.

Unlike arable land, which is cultivated and resown artificially year after year and on which the crops can therefore be cropped close without injury, a stock range has to seed itself naturally, and on account of the high mortality percentage among seeds under ordinary conditions it must be allowed to seed itself heavily or else it will deteriorate.

EXCESSIVE LAND VALUATIONS.—In discussing values the distinction between an annual and perennial range must be borne in mind. The annual range is much more subject to change than the perennial range; therefore the difference between maximum and optimum capacity is very much greater in the case of the former than of the latter. The value of range, moreover, depends not alone on the number of head it will carry, but also, and primarily, upon the nature and quality of the forage. If the prevailing forage plants are annuals, or even perennial bunch grasses, the maximum carrying capacity, for a few years at least, may be as high as a range producing turf forming or creeping rooted grasses, but its optimum will be much lower.

HOW OVERSTOCKING EFFECTS DETERIORATION.—Two factors are at work on range deterioration. One is the destruction of the choicest forage plants by selection; the other the introduction of uneatable weeds which, multiplying rapidly, crowd out the often less vigorous useful species, and fill the spaces left vacant.

So long as there is a choice left to them, stock naturally wander over a range, picking out from among other plants the specially palatable species. Thus, by close cropping, the favorite forage plants may be almost entirely prevented from seeding. On an "annual" range most of the plants, being shallow rooted annuals, are easily pulled out and destroyed. As they depend entirely on the production of seed for the propagation of their kind, it is clear that in this way their number is rapidly diminished. A few always escape, on account of their situation in secluded places, or because of their depauperate size, or from other causes, but these are too poor in seed production to maintain the productiveness of the range.

On a virgin range there is not only an abundance of plants sufficient to feed all the stock and to scatter seed as well, but also a large quantity of ungerminated seed lying dormant in the soil. On this account it is clear that such a range may be stocked to its maximum capacity, for a short time, without injury. After a year or two, or perhaps a still shorter time, the granary of surplus seed is exhausted and heavy stocking prevents the formation of more than a small quantity of new seed. Then deterioration commences. Every plant eaten means not only the loss of one individual but also the destruction of so much reproductive power. Formerly there were plants enough not only for forage but also for seeding; now, every one eaten represents so much seeding capacity destroyed. And herein lies the difference in value (now represented by many dollars) between the annual and the perennial range. As an annual range depends on the production of seed for its preservation, close feeding means the destruction

of the next generation as well as the present. A perennial range, on the other hand, does not depend upon seed for its preservation and often not for its reproduction; for the individual plants live on from year to year and the best of them propagate themselves from their running underground stems. Such plants can be pastured comparatively close, not only without injury but with absolute benefit, for close grazing induces them to throw out more roots and form a denser turf.

The selection by stock of the choicest of the annual plants hastens deterioration in another way. The reduction in the number of plants leaves so much more nutriment and space available for the growth of weeds and other less valuable species. Weeds invariably follow the introduction of stock into a country. By range weeds we mean any plants of thrifty, vigorous habit, which are distasteful to stock. Just as certainly as the selection by cattle of the choicest plants makes it difficult for them to maintain a foothold, so surely does the same process of selection allow the weeds every opportunity to increase, by maturing and scattering seed without let or hindrance.

These weeds are largely alien species, introduced chiefly by accident, with the advent of the white man, or along with the domestic plants and animals introduced by him at a later date. They are often plants which have become hardened to much more adverse conditions of soil and climate than they find in California, and therefore grow with greater luxuriance and spread with greater rapidity than species which have, by long continuance under uniformly favorable conditions, shown a tendency to "run out" or to deteriorate. The struggle for existence seems to be as keen among plants as among human beings, and if one species or race is killed out by its animal or other enemies, another race, less liable to attack by the same kind of enemy, steps in to fill the space. Under these conditions it is evident that on an overstocked annual range those species which are especially palatable to stock will have little chance to propagate their kind.

WILD OATS AND ALFILERILLA.—If the destruction of the most palatable forage plants by selection is constantly going on, how could such palatable species as wild oats and alfilerilla ever have become so abundantly naturalized as to be the prevailing plants on the ranges in the relatively short time since the Spanish occupation of California? And if they had at one time been able to establish themselves as aliens would not the same factor which enabled them to establish themselves prevent their being killed out by pasturing at a later date? Is it not more probable that they are indigenous species, which have suffered numerical diminution in the same way as have the wild clovers? Such are the questions asked in this connection. We are not at present prepared to answer them decisively, but to anyone who has watched the spread of introduced weeds in California, especially those from the Mediterranean region, the exotic origin and rapid increase of wild oats and alfilerilla will not appear improbable, even in the face of general range deterioration. Usually European weeds find themselves quite at home on the soil of this State, new to them, and comparatively unimproved. Annual species, especially, spread with great rapidity. If the wild oats and alfilerilla were introduced at the time of the Spanish occupation, when cattle were comparatively few in the land, they would have abundant opportunity to "take" the country in spite of being relished by stock. Later, however, as cattle multiplied, and sheep were introduced, forage became relatively less abundant, and at the same time weedy species, such as small foxtail and squirreltail, less liked by cattle, came in, gradually monopolizing the ground left vacant by the destruction of the wild oats and alfilerilla.

Exactly the same process of introduction and eradication is taking place at the present time under our own eyes. Soft chess has, within recent years, taken possession of the hills in some parts of the State, much to the disgust of stockmen. Sooner or later the cattle have taken such a fancy to the new forage, either from necessity or choice, that it, in turn, has been almost eaten out, enough being left to show that it was once there, and other species not yet liked by cattle are taking its place.

So this process of elimination or natural selection goes on. Species which are liked by stock, but which are unable to retain their hold on the soil when grazed or trampled, disappear or become scarce, and other species come in and take their place. These, in turn, must pass away if unfitted to maintain the struggle for existence. Only the fittest survive—the fittest from the standpoint of the plant—the least fit (the weedy, useless species) from the standpoint of the rancher.

BUNCH GRASSES.—The fact has already been alluded to that the so-called "bunch grasses" are not as well adapted for grazing as are running and tuft-forming species. On account of their tuft-forming nature the former are more easily pulled out than are species which spread by means of underground rootstocks.

SHEEP VERSUS CATTLE.—Cattlemen think that the great depreciation in carrying capacity is due to sheep, claiming that sheep do far more injury to a range than do cattle. This is only partially true,

however, and while it may be true that a range overstocked with sheep will suffer more on account of their close biting than one overstocked with cattle, which do not graze so closely, it is equally true that a sheep range carrying only the optimum number can be kept in better condition than a cattle range which carries the maximum number. Sheep do no more damage than cattle if properly handled and not crowded, and they can be kept without injury to the range; in fact, it was claimed by intelligent stockmen, accustomed to handle both sheep and cattle, that certain sheep ranges in Mendocino county were at the time of this investigation in better condition under sheep after three years of comparative drought than they were thirty years ago.

It is an indisputable fact that some men have made a financial success of sheep raising on the open range, and that at the same time their ranges are in a good condition, and in some cases better than adjoining cattle ranges.

It is not improbable, however, that sheep do more damage than cattle to perennial "bunch grasses."

SUMMARY.—The cause of range deterioration, therefore, is overstocking, and it is the animals themselves that do the damage. Further, the point at which overstocking commences has not been decisively defined and varies with the individual range. What then, can the stockman or range owner do to improve his condition? He may well say that the range is run for the sake of the stock that can be raised on it and not for the sake of preserving the feed, and that though stock may be the cause of range deterioration they can not be eliminated from the problem.

The task is only just begun, however, and the problem can not be solved immediately. In the following issue some suggestions will be offered which it is hoped will prove steps toward the desired end.

THE FIELD.

Forage Uses of Russian Thistle.

Our recent exposition of the Russian thistle as occurring in the valley side of Contra Costa county has attracted much attention. The fact should be emphasized that the plant has taken hold in many places from San Diego northward to the center of the State and we know not how much farther northward. We mentioned grazing as one of the ways of keeping the plant from seeding, and thus cutting off its generations, for it does not carry over in the root. In view of these facts, the following from Secretary Coburn of the Kansas State Board of Agriculture is very pertinent:

AN ENEMY, BUT POSSIBLY USEFUL.—Russian thistles, as generally understood, are regarded as the farmer's implacable enemy, a hateful menace to all useful vegetation, and a curse to agricultural districts; difficult to prevent the spread of or to exterminate. While it is well known that, when young and growing, they are often greedily eaten by live stock, especially sheep and cattle, their utilization as indicated is new. In this connection it is proper to say that the State Board of Agriculture, in devoting a publication to the discussion of this subject, does not in any sense intend to appear as encouraging or even countenancing the growth of thistles for any purpose whatsoever, as the farms of Kansas should not be disgraced nor depreciated by their presence.

THISTLE HAY.—Of those interviewed, most agree that the so-called "thistle hay" quite favorably corresponds in feeding value with that from native grasses, and some even assert that it is equal to alfalfa, which it is said to resemble in some respects, when properly cured and handled. At all events, from a general survey of the reports, thistle hay is considered by those who have used it nutritious and fattening, and cattle and sheep, with no other feed, can be sustained throughout the winter in as fair condition as when other ordinary forage is used. It is also indicated that horses and mules do not seem to care so much for nor do so well on thistle hay as do other stock, and hogs will not eat it at all, although they relish the thistles when cut and fed green. When used with sorghum, millet, alfalfa, etc., the general experience has been that cattle made no apparent distinction between them, and, if any preference was shown, it would likely be in favor of the thistles. The hay is generally all thistles, owing to their habits of growth, as, on land sufficiently numerous to justify harvesting, they have usually choked out other vegetation, even other weeds, and in the majority of cases no cultivated crops were grown; as, if attempted, they more often than otherwise came to naught. Small grains, such as wheat, rye and oats, are easy victims of the thistles. Crops that can be frequently cultivated, like corn, can be successfully grown, other conditions being favorable, in spite of the thistles, as the frequent cultivation necessary for the best development of the corn greatly retards and dwarfs the growth of those not killed by it; but lands badly infested with Russian thistles are at best much depreciated for general farming.

The thistles are cut for hay with mowers, ordinari-

ly when 8 to 12 inches high, and blooming, before the stems become hardened and woody. The methods of handling after cutting are various. Some rake and stack immediately; others let them cure as they lie, afterwards stacking; while still others let them wilt, then cure in shock and haul from the field as used, or stacking at convenience; whatever way they are handled seems to give satisfaction, provided the hay is not rain-washed after cutting, which discolors and may make it distasteful to stock. To prevent this possibility, in a measure, it is suggested that thistle stacks should be topped with something that will turn rain, as at first the thistles lie very loosely and will not shed water, although later settling quite compactly. Some report that thistles can be cut two or three times during a season, when conditions are favorable.

GRAZING.—Wherever live stock has access to thistles it is observed that the young plants are greedily eaten and they are found excellent for increasing the flow of milk. Their early growth gives succulent grazing in the spring some time before other vegetation is advanced sufficiently to be available, and is likely to be abundant on infested tracts, regardless of weather or soil conditions.

It is generally reported that all live stock relish the pasturage afforded by thistles for the three or four growing months each year, and sheep and cattle particularly like it, abandoning other herbage in its favor, and even break through fences in their eagerness to graze upon it, rather than be confined to the prairie or buffalo grass. Thistles, of course, are most valuable for pasturage when young and tender, but live stock will eat, apparently with relish, the matured plants in the field, when damp and soft, sometimes even preferring them to the green grass. When intended for hay, thistles preferably should not be grazed upon. Whether grazed or cut for hay, they will in course of the season produce enormously of seed, and their survival is in no wise endangered by either. It is also reported that the very young plants are excellent for human food as "greens."

Russian thistles are annuals, growing from the seed each year, and, if no seed is produced, eventually there will be no thistles. When young, individual plants are easily killed by cutting off at the surface of the ground, and whole fields of them destroyed by carefully plowing under, completely covering, and, of course, no seeds are produced. Nearly all agree, however, that wherever present in large quantities or scattered over wide areas, their eradication is difficult, and, without the untiring co-operation of those in infested districts, it will fail of accomplishment.

CONCLUSIONS.—The average number of years thistle hay has been used by those reporting is slightly over three, some feeding it as many as six years. The largest area given as having been harvested is 100 acres, others ranging from that down to a few acres. Reported yields per acre are widely divergent, the general average probably being about 1½ tons, although in some instances near four tons have been secured. The largest aggregate quantity reported harvested by any individual is 250 tons.

To summarize, Russian thistles are undesirable and a menace to legitimate agriculture; but, if no better feed for live stock is available, their use as such is pronounced justifiable wherever present in sufficient quantities. Their production, however, is not encouraged for any purpose, and they should be exterminated, the ground formerly infested devoted to reliable forage crops which contain all the elements that recommend the thistles, and more, without their objectionable features.

THE POULTRY YARD.

Chickenpox.

Dr. S. L. Roberts of San Diego writes to the Poultry Monthly the following in reference to chickenpox: "I have never known chickenpox to be so prevalent in the West as it has been during the past eight or more months in Oregon and California. My mail brings me letters every day describing a disease among fowls that seems new to the writer, but which at once tells anybody of a little experience that it is a case of eruption—pox—contagious and otherwise. I think, perhaps, I have written more respecting this chicken malady in the past year than I had occasion to write in the forty years prior thereto. And the letters keep coming. The affliction is very easily controlled, but it is a new ailment to very many breeders. Symptoms: Little postules form on different parts of the head, face and head appendages, sometimes appearing first in one place and then again in another. The eruptions at first are about the size of No. 4 shot and of a brownish color at the periphery and yellowish in the center. Perhaps only one or two are observable in the start, but in a day or so two or three more come to view, and those first appearing have become larger. They now spread rapidly, if at all malignant, and soon cover the face, wattles, comb, and even the edge of the mandibles do not always escape. The upper eyelid is very certain to become a target. The victim's health doesn't seem to suffer much. Treatment: Tincture of iron dropped on the eruption from a straw or quill, if a medicine

dropper is not at hand, going over each pox three or four times—as long as it will absorb the color. One treatment is usually sufficient, if thoroughly done, but sometimes two are needed."

THE STOCK YARD.

Joseph Mailliard Buys Judge Shields' Jersey Herd.

TO THE EDITOR:—I have sold to Joseph Mailliard of San Geronimo, Marin county, twenty head of as high bred and good individual Jersey cattle as there are in the State. The herd represents most all of the famous and fashionable families, and Mr. Mailliard has the material now from which to breed one of the best herds on the coast, which I feel sure he will do. The herd includes eighteen cows and heifers and two bulls. The bull at the head of the herd is Brown Bessie's Golden Gate, one of the grandest bulls in America. At the World's Fair in Chicago the two Jersey cows, Brown Bessie and Merry Maiden, were the leaders in all the Jersey tests and showed themselves to be among the best butter cows ever born. This bull was sired by a son of Brown Bessie, and his dam, which had a butter test of over twenty pounds a week, was a half sister to Merry Maiden. He thus combines the blood of the two champions and is otherwise choicely bred, having in his pedigree very many highly tested cows. He belongs to the great Combination family.

The cows include such animals as Carmenita, the second prize cow at the recent State Fair, and a member of the first prize herd. Pedro's Poppy, by a richly inbred Pedro bull, while her dam was by the unbeaten show bull, Major Appel Pogis; her granddam being by Ida's Rioter of St. Lambert, next dam by Stoke Pogis 5th. Where can this breeding be equaled?

Another cow, Lady Zettie, was the sweepstake cow and first prize cow at the California State Fair when the cattle were judged by Major Alvord of Washington, D. C.

Two other young cows in the herd were purchased in Wisconsin and were sired by Recorder, a famous son of the champion Brown Bessie.

Another young cow was sired by Brown Bessie's Son 12th, a grandson of Brown Bessie purchased from Hood farm, Massachusetts, the dam of the young cow being by an inbred Alphi-Coomassie bull.

One of the heifers was sired by a son of old Pedro, one of the great bulls of the world, and her dam was by another famous son of Pedro, the champion Pedro's Rural Marjoram. This is one of the richest bred Pedro heifers in the West.

Another cow of notable breeding is Oregon Beauty: she was sired by a son of Exile of St. Lambert, the champion butter sire of the world, while her dam was sired by a son of Stoke Pogis 5th, another bull of great celebrity.

The remainder of the herd is of the same breeding as the foregoing and are of equal excellence. I have been breeding this herd up and culling from it for fifteen years, and the animals sold to Mr. Mailliard were the product of all these years of care, attention and expense. I feel that in his hands they will be given an excellent chance, and that from these cows and the bull at their head he will breed some champions which will be a credit to his breeding and will in his practical hands demonstrate the superiority of the Jersey for practical dairy work.

Sacramento, July 18.

PETER J. SHIELDS.

What the "Pacific Rural Press" Does for the Farmer.

TO THE EDITOR:—I am very much pleased with the PACIFIC RURAL PRESS. It is full of valuable information. To a man who reads and wants to learn, every copy is worth the price of a year's subscription. Every farmer ought to take it. It would better qualify them for their work. It would let them know what other farmers are doing over the State and inspire them with new energy, give them new ideas and better success.

P. D. FOWLER.

Tulare.

Mr. Fowler is chairman of the Tulare County Board of Horticulture, and a man of wide knowledge and observation.

Hon. James Wilson, National Secretary of Agriculture, predicts that the day is not far distant when the value of the agricultural products of Alaska will exceed that of its mines. M. J. Fancher, of San Jose, says that it has frequently been represented to him by Eastern men that more people from the Eastern States would come here to settle if there were more manufactures in California. Not all those who wish to come to California are farmers.

Subscribers are asked to remember, in talking with those who are not subscribers, that the PACIFIC RURAL PRESS is the oldest and best horticultural paper on the coast; that it covers every line of country industry, and that, to an intelligent reader in any line, it contains every week some article worth more for the direct promotion of his prosperity than the cost of a year's subscription.

Agricultural Review.

ALAMEDA.

CATTLE IN GOOD DEMAND.—Livermore Herald: Good sized two-year-old heaves bring as high as \$35 and \$40 a head. Fresh milch cows are in constant demand at prices ranging from \$45 to \$65, according to size and condition. Calves are in active request at \$10 and \$12, but they are rarely sold by stockmen, who are often in the market as buyers. There is considerable activity in the market at present. A number of sales at very satisfactory prices have been reported recently. From 8 to 8½ cents per pound has been paid. There are a number of stockmen who are not satisfied with even these prices and believe that the approach of winter will bring a stronger demand and higher values.

KERN.

THE HOG INDUSTRY.—Delano Record: W. Hubbard hauled a hog to town Monday and sold it for \$18.60. It was not a prize thoroughbred with a pedigree. It was just an ordinary sow. It weighed 310 pounds and he got 6 cents per pound for it. This is a bad season. The wheat on the plains is yielding from one and a half to two and a half sacks per acre, and it is worth just now 95 cents per hundred delivered at the warehouse. Wheat, when it is crushed and soaked, or when it is boiled, makes the best hog feed, and four and a half pounds of it should make a pound of pork. Mr. Hubbard had plenty of room in his wagon for ten such hogs. The reason he didn't bring the other nine was because he did not happen to have them. The reason he didn't have them was because he has no green feed for them in summer. The wild feed that grows here in winter makes the finest hog pasture. Grain is nearly always cheap, and with eight or ten acres of alfalfa to furnish green feed in summer many grain farmers could make it profitable to haul hogs to market by the wagon load.

KINGS.

PEACHES AND GRAPES.—Hanford Journal: The peach crop this year is unusually heavy. Where the fruit has been properly thinned it is of good size. Well posted fruit men say that well-dried, first-class peaches will command 6 cents a pound this season. The grape crop is very heavy and well set on the vines, so that the only thing the grape growers have to fear is poor weather for drying and the matter of prices.

THE RING-TAIL COON PLAYS HAVOC WITH WATERMELONS.—Hanford Sentinel: The melon raisers along the banks of Kings river are having no end of trouble with the little ring-tail coon. These little pests are extremely numerous in the thickets along the river and are making nightly raids on the melon patches. If they would destroy but a ripe melon now and then the raiser would not object so seriously, but in trying to find a ripe one the coons destroy at least a dozen green melons. When they find a ripe one the coons make a round hole in the side just large enough to admit their heads, and through this the entire inside is removed as clean and as smooth as though gouged out with a spoon. [This is probably the ring-tailed rat.]

LOS ANGELES.

SLIGHT DAMAGE TO APRICOTS.—Covina Argus: The extremely hot weather of the last week caused some damage to the apricot crop by scorching the exposed fruit.

ABOUT ORANGES DROPPING.—Pomona Progress: The impression prevails generally among the orange growers that the new oranges have dropped so badly from the trees that there will even be a considerably lighter crop next season than there has been this. It may be found that not so large a percentage of the new crop of oranges is on the ground as many fear. One experienced orange grower in the Kingsley tract said that he examined the trees thoroughly the other day and there are a good many oranges left on them still; that while many have dropped, the bloom was exceptionally heavy this year and it was necessary that nature should do some vigorous thinning out of the fruit. Every year when the new oranges drop, as many of them will, there is an alarm lest the crop has nearly all gone; yet it generally turns out that there is a fair crop left. He thought it would turn out so this year.

APRICOT DRYING.—Azusa Pomotrophic: The business of drying 'cots is well under way. The crop is rather above the average, both as to size and quality. A number of local growers are drying their own fruit this season, instead of sending it to a public drier, as has largely prevailed heretofore. Already one or two buyers have been on the ground offering 4½c, and

claiming that they had made other purchases on this basis. We have not heard of anyone who bit at that price. Growers here are expecting considerably more, and if their fruit is well treated, we see no reason to discourage their ambition. Buyers who appear in the field are generally looking for bargains—trusting that the offer of spot cash will be alluring enough to secure at least a portion of the fruit. We believe the market will stiffen up to a 6c basis in a couple of weeks; at any rate, it is not likely to go lower.

CHICKEN THIEF SHOT AND KILLED.—About midnight of the 16th a man supposed to be one R. Gilbert was shot and instantly killed in the act of robbing the chicken house of Horace Brown, a rancher living near Downey. The man with a barley sack in his left hand was opening the door of the chicken house when he was shot in the back by two young men who were watching for him. A rubber-tired buggy and powerful horse were found hitched near by. In the rig were a number of befuddled sacks, which leads to the belief that the dead man was a professional poultry thief. The man was about forty-five years old and well dressed. It is stated that during the last month the ranchers in the vicinity of Downey have lost about 600 chickens by the depredations of night prowlers.

ORANGE.

BEET GRINDING WILL SHORTLY BEGIN.—Anahelm Gazette: Steve Devoe from Los Alamitos reports the beet factory putting things in order for the beginning of the campaign, which commences about the first. The tonnage on irrigated lands is first-class, while that on dry lands is relatively smaller. The season's output is expected on the whole to be the same as last year. Numerous artesian wells have been sunk since the last campaign on lands tributary to the factory and the result has been highly satisfactory. The drainage system has been so changed that the water from the factory will be used for irrigation purposes on land not productive heretofore to any great extent. Last year's output of sugar amounted to 60,000 tons.

SAN BERNARDINO.

SUGAR BEET CAMPAIGN NEARING.—Chico Champion: The present programme is to complete the harvest on July 28, and to commence slicing beets on Saturday, August 2, at 6 o'clock in the morning. This is yet liable to possible change on account of the condition of the crop and weather. Beets are in splendid condition. Good growing weather has already made a heavy yield on most land, and they are now commencing to ripen with a good sugar percentage. Analyses made the past week of beets whose purity showed that they were ripening gave from 15% to 18% of sugar. In fact, all of the analyses so far made show a very satisfactory sugar content. The present prospects are that the coming campaign will be a long one, lasting four and one-half to five months, and it is not improbable that Christmas will see activity yet in the factory.

SAN JOAQUIN.

FRUIT SHIPMENTS LARGEST ON RECORD.—Lodi Sentinel: The Earl Fruit Co. shipped seven cars of fruit out of Lodi last week, which is the largest number that ever went out from here in the same length of time of tree fruit.

BIG GRAIN YIELDS.—Stockton Mail: The farmers are harvesting larger crops of grain than they anticipated, and it is also of better quality than usual. The grain on the islands is exceptionally heavy and fine, though little of it has been harvested as yet. Barley on the McLaughlin tract, back of Tracy, is turning out from twenty to fifty sacks to the acre, and it is said that wheat there will average over twenty sacks. Over on the West Side some of the farmers are getting from fifteen to twenty-four sacks of barley to the acre, and in Stanislaus county the barley is running from fifteen to twenty-two sacks to the acre. The wheat is also turning out well.

DRIED APRICOTS GOING EAST.—Lodi Herald, July 19: Mason Bros. of the Lodi Fruit Warehouse are handling the entire output of dried apricots of northern San Joaquin county, with the exception of the Cory and Buck orchards, the owners of which ship direct. The first carload of dried 'cots for the season left Lodi through the local firm last Thursday and the following day another carload was consigned to Des Moines, Iowa. Each car contains fifteen tons. The fruit is an excellent variety, is in splendid shape and is well cured. The grower is paid 5½¢@6c. per pound on delivery to the warehouse, Mason Bros. thereafter assuming the risk of routing and marketing.

SANTA BARBARA.

ROTATING GRAIN AND BEANS.—The

grain yield of Santa Maria section will probably reach 400,000 sacks. This was grown on a 12.5-inch rainfall, of which only 10 inches fell close enough to have been of any appreciable value. The best grain has been grown on land that had been planted in beans the previous season. Some Chevalier barley on such land has averaged as high as twenty to twenty-five cents per acre. It is nearly double the yield of the ordinary stubble ground adjacent. Intelligent farmers that own their own land or who can make arrangements to lease their land for several years are alternating their crops with beans and grain, wherever the land is suitable for beans. On the Suey ranch the Newhall Land Co. take the advantage of their tenants' work, renting to them one year for beans and the next year putting the ground in with their own hired men and reaping the full benefit of it themselves.

WALNUT GRADING.—Press: The Santa Barbara Walnut Growers' Association will erect a grading and drying plant in Goleta. For this purpose an acre of land has been purchased of Mrs. Avery Kellogg, adjoining the Southern Pacific right of way, and the work of construction will begin at once. It is estimated that the plant will cost, including the site, \$4000. The improvement is in the hands of F. E. Kellogg, Harry Owen and Jasper Lane.

SANTA CLARA.

APHIS EATERS FOR THE PRUNES.—San Jose Herald: County Entomologist Ehrhorn recently received a consignment of prune aphis eaters (*Coccinella septempunctata*) from Alexander Craw of the State Board of Horticulture. They have been distributed among the orchards throughout the county. The parasite was sent to this State from the Department of Agriculture at Washington. It was originally found in Saxony. The prune aphis has done great injury to the prune orchards in this valley, and, as the parasite recently introduced is death on the pest, it is looked upon as a great blessing to the orchardists. They increase very rapidly, and it will only be a matter of time before the prune orchards will be rid of the prune aphis. Alexander Craw was in San Jose last week and went on a tour of inspection throughout the county with County Entomologist Ehrhorn and examined the condition of the trees and the extent with which the parasites already planted have benefited the orchardists. It was found that the different beneficial insects planted during the past had greatly multiplied.

SANTA CRUZ.

MANY THOUSAND LADY BUGS.—Watsonville Register: C. H. Rodgers, O. S. Tuttle and W. A. Sanborn, prominent orchardists of this valley, received a consignment of 300,000 lady bugs from Andrew Church of Tassajara Springs. The insects will be turned loose to prey upon the fruit tree pests. They are the advance guard of 400,000 more which are expected to arrive here soon. Lady bugs are quoted at 50 cents per quart, and a quart contains about 10,000.

SOLANO.

A PROSPEROUS SEASON.—Dixon Tribune: Adobe lands a few miles to the east and south of here, which are on the market at not to exceed \$4000 per quarter section, have yielded from twenty to twenty-five sacks of the best brewing barley per acre this year. In other words, in many instances the crops have equaled and even exceeded the value of the land. Wheat has in most instances made an excellent yield this season, but prices are not as satisfactory as those prevalent for barley. From all points of view, however, the grain growers of this section have experienced the most prosperous season in many years.

HORSES POISONED BY ARSENIC.—A number of valuable horses were poisoned by eating an arsenic mixture which had been distributed on the Peters ranch, near Vacaville, to kill grasshoppers last week. One valuable animal died from the effects of eating the poisonous mixture and at last accounts six or seven others were in a serious condition.

SONOMA.

HEAVY YIELD OF GRAPES.—Index-Tribune: The grape crop in this valley will be simply enormous this season. The vines are a mass of young grapes. In W. H. Daly's vineyard, formerly owned by the Heller estate, eighty-seven bunches were counted on one vine alone. The vine is an ordinary five-year-old graft tied to a grape stake and is one of many in the same vineyard.

SUTTER.

DRIED APRICOTS GOING EAST.—Sutter County Farmer: This week a carload of apricots in boxes will be sent to the New York market. Already this season over 200 tons of apricots have been delivered in this section, the selling price being

from 5 cents to 5½ cents per pound, with 6 cents for a few choice lots. Some of the growers are holding their 'cots for the latter price.

TEHAMA.

FOUR HEADS OF BARLEY ON ONE STALK.—Red Bluff News: Joe Casale was showing a curiosity on the streets Tuesday—a four-headed barley, which was grown on the Rawson ranch. All of the four heads grew on one stalk, and the largest head was fully 4 inches in length and well filled. The other three heads were small, bearing only from twelve to eighteen kernels each.

BANANA TREE IN BLOSSOM.—In the dooryard of the home of Mrs. Elizabeth Price there stands a banana that this year promises to bring forth its fruit. On one of the trunks is a banana bud which each day comes forth a little farther from behind the wide-spreading leaves. At present several rows of young bananas are exposed to view. The tree was brought from Los Angeles about ten years ago.

SHIPPING TRAGEDY PLUMS.—The Porter Bros. Co. at this place has now a force of twelve women and girls packing Tragedy plums for shipment to the East. The fruit comes from the Cone, Chipman, Star ranch and other orchards, and a carload is shipped each alternate day. The plums are of good quality and are expected to bring good prices.

NO ORANGES THIS YEAR.—Red Bluff People's Cause: "What is the matter with the orange trees this season?" is a question everybody is asking. They have no fruit on them, and why no one knows. The season seemed to be an exceptionally good one for a crop, as there were no late frosts and plenty of damp weather in the spring. The buds were not nipped by the frost. Some lay the failure of the crop to the cold, damp weather in April. Many orange trees were filled with blooms, but no oranges are visible on them.

TULARE.

NOW IT IS APPLE BLIGHT.—Lemoore Leader: It is reported that the blight which has affected and is killing pear trees all over the valley is now doing as great damage in some localities to the apple trees as it has to the pear trees. This is said to be the case in the vicinity of the celebrated Blossom orchard in the foothills east of Visalia. The fruit seems to be attacked first and becomes rotten and decays before ripening.

A FINE CROP.—Porterville Enterprise: George A. Fleming, one of the owners of the large prune orchard west of Porterville, expects one of the largest crops of prunes that orchard has ever produced, so much so that he is now having made 4000 extra trays in order to handle the increased yield. He estimates to have 100 tons of dried fruit, which has already been contracted for.

A GOOD APRICOT YIELD.—Delta: The Cain fruit ranch, under the supervision of Douglas Hogan, has exhausted its crop of apricots in the way of drying. There are only 227 apricot trees on the ranch, which is about three acres, and from that number of trees five tons and ninety pounds of dried apricots were realized. The fruit has been sold, the hired help paid and a balance of over \$100 per acre is left over and above expenses.

YOLO.

THE ALMOND CROP.—Davisville Enterprise: The Almond Association at a recent meeting decided to handle and market the crop in the same manner as it did last season. Last year the season for gathering almonds opened August 8th. This season the time will be later, about August 25th. The Association's estimate of the State's crop for 1902 is 267 cars of 10 tons each, or 2670 tons, and Davisville's yield is estimated at 215 tons, against 157 tons last year. The nuts are exceptionally large and fine.

THE APRICOT YIELD.—Winters Express: The bulk of the apricots are dried and the yield is exceptionally large. William Baker will have about 45 tons, and shipped at the beginning of the season 40 tons of green 'cots. He says he has lost about 10%, so the total yield of green fruit has been nearly 400 tons. The loss in most of the orchards has not been very heavy, notwithstanding the scarcity of help.

YUBA.

THE HOP CROP.—A Marysville telegram says the warm weather is forcing hops rapidly, and Wheatland growers look for ripe crops about Aug. 20. A few pickers are now arriving, but it will be impossible to secure sufficient white labor for the season's work. This will necessitate the employment of Japanese; but a recurrence of the labor agitation of two years ago is not looked for, as it is plain hop growers must either get foreign labor or lose their crops. The lowest price offered is 18c, but 20c is asked.

THE HOME CIRCLE.

The Guest.

Luck tapped upon a cottage door—
A gentle, quiet tap;
And Laziness, who lounged within,
The cat upon his lap,
Stretched out his slippers to the fire
And gave a sleepy yawn.
"Oh, bother! let them knock again!"
He said; but Luck was gone.

Luck tapped again, more faintly still,
Upon another door,
Where Industry was hard at work
Mending his cottage floor.
The door was opened wide at once.
"Come in!" the worker cried,
And Luck was taken by the hand
And fairly pulled inside.

He still is there—a wondrous guest,
From out whose magic hand
Fortune flows fast—but Laziness
Can never understand
How Industry found such a friend.
"Luck never came my way!"
He sighs, and quite forgets the knock
Upon his door that day.

—Youth's Companion.

To the Fiancee.

White moon slipping from a cloud,
One the edge of night,
Somewhat haughty, cold and proud,
Wonderfully white!
Such, my dear, you look to me,
So austere you seem to be
In your flowing drapery—
Dream of my delight!

Blossom peering from the vine,
Perfect in its grace,
Much too beautiful and fine
For the garden place!
Such I call you, standing there
Straight and tall, divinely fair,
With the shadows in your hair,
Sunshine in your face.

Moon and Blossom—these will do
For a poet's part;
Either metaphor is true
And belongs to Art.
So I toss this rhyme in June;
Orange Blossoms coming soon,
Then, at last, the Honeymoon:
Bring them both, Sweetheart!

—Felix Carmen in New York Life.

What Happened in the Ninth Inning.

From the edge of the crowded stand the field, vivid with the green of mid-spring, spread away, smooth and level, to the river bank. In the foreground the turf was gone in places and the red soil, packed by the runner's feet, showed through in the shape of a diamond. The sun was already behind the stand. The pitcher as he threw his arms overhead was silhouetted in a long, grotesque shadow that stretched far behind him. The sky was very blue; the river was burnished with streaks and splashes of sunlight; the flag above the boathouse hung limp. Across the sluggish stream Cambridge slept in the languor of a late June afternoon.

Half way up the stand were seated two middle-aged men. Middle-aged is an adaptable term, which, in this case, is used to designate the neighborhood of fifty years. Both were good examples of the American business man at his best. Erect, broad of shoulder and chest, keen of eye and kindly of face, they were despite dissimilarities of feature and attire, strikingly alike.

Some thirty years ago they had been classmates and close friends at college. Scarce four hours ago they had met, after many years of separation, in a Boston hotel, had hailed each other in the manner of schoolboys, had wrung each others hands and had lunched together at a corner table on all the indigestible delicacies of their college days. One, in the grey plaid suit, had run over from New York for a Saturday morning conference of railroad magnates; the other, whose dark clothes and less conventional air spoke plainly of the West, was in town on business connected with the capitalization of a Des Moines bank. Almost instantly the conversation had left business and finance behind and had turned to college recollections. Each had promised himself a visit to Cambridge, and so, when cigars were

alight they set out down Cambridge street and across the old bridge, striding buoyantly along as though thirty years or so had been thrown aside.

In the square they had paused before a placard in a window. "H. U. B. B. C. Harvard vs. Princeton. Soldiers' Field, Saturday, June 21, 3 p. m." they had read.

"Why, that's to-day, John!" the western man had exclaimed.

"So it is, Pete."

"Well, what's the matter with our going to it?"

"None at all. Let's go for old time's sake."

And so they had followed the throng across the creaking little drawbridge and out the dusty road, the westerner marvelling at the changes that greeted him, the New Yorker explaining this thing and that from the fuller knowledge of one who had every other year journeyed hither to see his college battle with Yale on the gridiron. For eight innings, eight breathless, thrilling periods of play, they had watched a contest between pitchers, a contest in which one after the other had struggled heroically to score but had failed. They had joined heartily, naturally in the cheering, had applauded brilliant playing, had sat nervously on the edge of the seat when in the sixth inning Harvard filled the bases, and had sighed disappointedly and in unison when the man at the bat had knocked a fly into the hands of the Princeton left-fielder and the side had gone out. And now it was the first half of the ninth and the orange and black batsman cracked a hit out past second base and arose calmly at first and nonchalantly dusted the dirt from his clothes. A little group of Princeton supporters exploded wildly into shrill cheers and waved their barbaric banners in the air.

"I've been watching that youngster who's playing shortstop," said the westerner. "Some way he's strangely familiar, though I don't suppose I've ever seen him before."

"Well, that's odd, Pete," answered the other. "It seems to me as though I'd seen him before, too. What's his name?" He took up the score card. "Sawtell! Sawtell!" he muttered. Then he clapped the other on the knee. "Don't you remember 'Buck' Sawtell, Pete? 'Buck' who played such a—"

"Of course I do! Played first base, didn't he?"

"Third, I think. Old 'Buck'! He was captain two years and—"

"The finest player in the college in those days, John."

"You bet he was. Do you suppose—"

"Of course he is! Why, man alive, look at him! It's old 'Buck' all over again; a little smaller, maybe, and—"

"I believe you're right, Pete! Yes, not quite so tall as 'Buck,' but like him! I wonder—" He turned and addressed a gentleman behind him: "Pardon me, but do you happen to know whether this Sawtell that's playing shortstop is any relation of Buckingham Sawtell, the old—"

"Yes, his son; they call him 'Buck.'"

"Ah-ah; thank you, sir. You heard, Pete? Just to think of old 'Buck' having—having a young 'Buck' as big as that boy! Dear me, dear me, it makes me feel very much of a past number, a thing like that."

"Well, now, John, my oldest boy's twenty-one."

"You don't say? And yet—good work, Harvard! Did you see that catch, Pete?—and yet it seems almost yesterday that we were here in college together watching 'Buck' Sawtell and Jamie Wilson and—little Tommy Sanford play ball. Great Scott, Pete, how time does go!"

"Indeed it does."

"And so that's 'Buck's' son," mused the other. "What's become of 'Buck'?"

"I don't know. I haven't heard of him for years. He lived in Pittsburgh, I think."

"Harrisburg it was, John."

"Yes, yes, I believe it was Harrisburg. Well—"

Then they were both on the edge of the plank again, cheering young "Buck." The Princeton batsman had

lined out a hot ball straight for shortstop and well over his head. And that active young gentleman had leaped a yard into the air and had caught it in his right hand and threw it to third, putting out the second man. The friends beamed at each other.

"Old 'Buck' all over again!" they cried in a breath. "That was his style to a dot; nothing was too high or wide for 'Buck'!"

"I remember one time in the game with Yale when the pitcher, it was 'Bully' Jones, I think, threw low to 'Buck' and the ball struck the ground just in front of the base. Nobody knew how it happened, but 'Buck' rolled over about six times in a regular cloud of dust, and when he got up he had the ball in his hand and the runner was out. Remember that, John?"

"Yes, just as though it were yesterday, Pete."

Princeton had filled the bases again and a determined looking youth rubbed his hands in the dust and grasped his bat. The little knot of Tiger benchmen were cheering without ceasing, their voices hoarse, their faces beatific. The stand was rolling out slow and measured slogans of encouragement, the long "Har-vards!" roaring against the ear like the break of great waves on the shingle.

"Har-vard!" cried the New Yorker.

"Har-vard!" bellowed the westerner.

Then there came a loud crack as the batsman found the ball, and in an instant he was speeding toward first base and the man on third was racing for home. The sphere sailed swiftly above the head of second base, center-field ran desperately forward, the Princeton men were leaping into the air and hugging each other ecstatically; the orange and black had scored. Then the ball sped toward home and the man from second base ran frantically in an endeavor to beat it out at the plate. Ten feet from the marble he flung himself forward and slid; there was a cloud of dust; the catcher stepped suddenly sideways with outstretched hands. "Out, here!" droned the umpire. The Harvard team trotted from the field. It was the second half of the ninth. And the score was 1 to 0 in favor of Old Nassau.

"One run will tie 'em, Pete," cried the New Yorker excitedly.

"That's right, John. One run will tie and two will win. But I'm afraid—"

"Pshaw! We've done it before, man! Recollect the fourteen inning game with Princeton when we won out in the last and beat 'em 28 to 26? And—why, Pete, look here! It was 'Buck' that knocked that base-hit and brought in those two runs. Sure as you're alive it was! Eh, remember? Golly, I'd almost forgotten it."

"Yes, yes, John, 'Buck' it was, and we had a bonfire as big as a house that night in front of the University and we were—er—"

"We did, Pete, we did!" laughed the other. "We didn't get back until after Chapel the next morning. I remember, Tommy Sanford was with us, and Grafton Williams; and we broke up the show at the Globe, Pete; and they put us out with three policemen and five ushers. Oh, I remember, my boy, I remember!" We were—ah—we were a bit lively in those days, Pete."

"We were." They grinned at each other reminiscently and lighted fresh cigars. When they were drawing well they looked across the field, across the river which had lost its golden glints, and over to the leaf-hidden town beyond, and they chuckled softly.

The first Harvard man at bat had reached first base on balls, and now the pitcher and captain, a tall muscular youth with very red hair, grasped his stick determinedly and smiled coolly at the pitcher. Perhaps that smile was at the bottom of it; at all events the first ball was straight and easy, and it went back the way it had come and very much farther; and it didn't drop into any one's hands but fell softly to the earth while center and right-fielder muttered impolite things to each other. The next man at bat made a

sacrifice and retired, but not before the procession of two had moved from first and second to second and third.

The Crimson stand cheered incessantly. A dozen frenzied leaders swung new hats and piteously demanded, entreated more noise. Half the spectators were on their feet. The New Yorker clutched his gold-headed cane desperately; the westerner outwardly cool, was very fervently praying for a base-hit, a two-bagger, a home-run; anything that might encompass a tally.

And the base-hit came. But it didn't send the man on third home. It only filled the bases and made the straw hats below the stand gyrate more wildly than before.

One man out and the bases full!

Things began to look bad for old Johnny Harvard.

"I wish old 'Buck' were here," muttered the New Yorker.

The Harvard left-fielder went to bat. The Princeton pitcher was himself again; one ball; strike one; strike two; two balls; strike three. The batsman swung his stick aside disgustedly and strode to the bench.

"Now if old 'Buck' could only get a whack—"

"But here's young 'Buck,'" cried the other. "He's going to bat, John! If he's a chip of the old block he'll—he'll—"

"Crack out a two-bagger."

"Or a three-bagger."

"Whack it, lad, whack it!" shouted the New Yorker. But his entreaty was drowned in the cheer that was swelling upward.

"Rah rah rah! Rah rah rah! Rah rah rah! Sawtell! Sawtell!"

Then everything became very quiet. The slim, smiling-faced youth beside the plate brought his bat forward and back, once, twice, threw aside his cap, kicked his toes into the earth until his weight was where he wanted it, and waited. The pitcher, wary, every nerve under control, turned the ball about between his hands and eyed the batsman. The outfield crept in, yard after yard. Then the first ball sped toward the plate. It went by and the umpire waved a careless hand outward. The ball went back and again flew toward the batter. Again it went by.

"Strike!" droned the little man in the black alapaca coat.

A volley of cheers strong and sturdy from the Princeton men on the west stand.

"Young 'Buck' was fooled that time," whispered the New Yorker.

"Wait," counselled the other.

"Wait, he knows his business. It's old 'Buck' over again."

"Two balls," said the umpire.

"What did I tell you?"

"I know, Pete, but—Oh, thunder!"

"Strike two!" cried the umpire. The batsman had struck and missed. The westerner looked worried. His feelings were mounting higher than was compatible with comfort.

"Two balls and two strikes," he murmured. "In our day it was different, lots different. You had seven balls, you know, and—"

His remark was never finished. The stand was on its feet, shouting unintelligible things, waving arms and hats and canes. It was Bedlam. High against the blue sky was a tiny dark sphere moving on and on, dropping imperceptibly at first, and then, as it looked, falling straight to earth. The outfield was racing to a man desperately back, while around the bases sped the slim youth, his crimson stockings twinkling through the dust. Already the bags were cleared and the third runner was trotting over the home plate. Then from the watching crowd arose a great joyful shriek. Far out in the center-field, yards beyond the nearest player, the ball dropped to the ground. And ere it was started on its journey home the slim youth walked disdainfully across the plate and into the arms of shiekng friends.

A minute or so later two middle-aged gentlemen were fighting their way through the crowd that had poured onto the field. Both were red of face from much shouting; one waved a gold-headed cane in the air; the

other beamed happily as he used elbows and hands to dig a path.

The slim youth, smiling, flushed triumphant, high on the shoulders of four equally triumphant friends, heard his named called. Through the pressing mob struggled as best they could two white mustached gentlemen. The first one thrust his hand forward.

"I know your father, my boy," he shouted. "You're like him; that's what he'd have done. Shake hands!"

"You're old 'Buck' all over again, sir," cried the second, enthusiastically. "I know him well, sir. We were in the same class. I want to shake hands, too, my lad. You—you—you're all right!"

"Thank you! Thank you, sir!" They were bearing him off, plunging through the crowd. "I'd be glad to see you—room—evening—Hold on, can't you, you duffers—I'm in Perkins, number—"

He waved a hand, smiling back upon them, and was borne off. They nodded vigorously. Cheers still filled the air.

On the outskirts of the throng they paused. The New Yorker gazed ruefully at the battered remains of a black derby. The westerner examined his own soft felt with interest and brushed some of the dirt from the crown.

"I lost my glasses somewhere over there," mused the New Yorker, "but I don't suppose there'd be any use looking for them."

"Not a bit, John." The westerner smoothed down his crumpled attire and then observed his friend with a broadening smile.

"John, we're—"

"Yes, Pete, I guess we are."

"What?"

"Two blamed old fools."

"I know it, John," was the answer. "But who cares? Let's get back to town. If we stay here we'll be building a bonfire or setting off Roman candles. There's something in the atmosphere hereabouts that is—er distinctly—er deranging to middle-aged intellects. But—" he smiled contentedly—"it was a good game, John!"—Ralph H. Barbour.

The Prevention of Malaria.

Mosquitoes being the common, perhaps the only, carriers of the malarial parasite, the prevention of malaria consists in large part of the destruction of those species capable of conveying the disease from one person to another.

Mosquitoes may be best exterminated by draining or filling all the pools in which the young develop. Small, stagnant ponds and mudholes which in warm weather accumulate a green scum are particularly favorable spots for the growth of the young mosquitoes. Whether small streams do or do not run into or drain from these ponds or pools seems to make no difference, since such shallow pools rarely contain small fish, which are the deadly enemies of the mosquito larvæ, devouring them with great relish.

Rain casks and cisterns and even small vessels, such as discarded tin tomotocans, may become the home of the mosquito "wrigglers." The malaria-bearing mosquito, however, chooses such receptacles for laying its eggs less often than do mosquitoes of a kind incapable of carrying the infection. Unnecessary receptacles which may catch or hold water until evaporated should nevertheless be dispensed with, or else be covered with fine mosquito netting to prevent access to them by the matured female insect.

Stagnant pools which it is impossible to drain or fill may be lightly sprinkled or otherwise treated with kerosene oil, about a teaspoonful to each two square yards of surface being sufficient. The oil spreads as a thin film over the surface, making it impossible for the young wrigglers to live beneath it.

The use of mosquito netting over windows and doors, and the use of canopies of the same material for the bed, are really important disease-preventing measures in districts where mosquitoes flourish.

A person suffering from malaria should carefully guard against being

bitten by mosquitoes if he would protect others from the disease, since no mosquito, even of the malarious variety, is able to convey infection unless it has previously bitten a sufferer from malaria. A mosquito infected with the malarial germ may reinfect the sufferer. Hence, one needs especially to be guarded against mosquitoes during convalescence. Recurring attacks of the disease are doubtless often caused by reinfection from the mosquitoes that caused the first attack, or by others infected by the patient's own blood.

Malaria is properly regarded as a non-contagious disease, but a sufferer from it who is exposed to the bites of mosquitoes may become a source of danger to the whole neighborhood around him through their intermediation.

The sufferer should continue the use of remedies at intervals, so that the parasite may in time become entirely eliminated from the blood.—Youth's Companion.

INSTRUCTOR—"In what respect did the fourteenth and nineteenth centuries resemble each other?" De Grees—"The nineteenth century resembled the fourteenth in that both were a hundred years long."

DOMESTIC ECONOMY.

Care of Table Linens.

Ownership of fine table linen is a matter of honest and pardonable pride to every woman. It is a pity that its durability and its beauty are at the mercy of her servants. From the moment the damask is removed from the table to the time when it is returned to the linen closet, presumably not always actually glossy, spotless and accurately folded, it is constantly exposed to harmful mishandling by careless or ignorant maids.

Until their mistress takes the time to teach them that care that her linens require, all sorts of things are liable to occur. The napkins or tablecloth upon which water has been spilled, instead of being hung up to dry, will be thrust into the bag or basket where soiled linens are kept, and soon smothered under the pieces that follow it. Within two or three days, earlier if the weather is warm, colonies of microscopic creatures that gather apparently from nowhere pre-empt the damp folds and speedily raise a green crop of mildew that is eradicable only by the use of an alkali that necessarily injures the textile it touches.

Stains that have been made by the spilling of food of various kinds are not attended to before they are thrust into the washtub; yet the process of laundering would be quicker and result more satisfactorily if the spots were removed as soon as possible after they have been made.

Grease spots spread and become putrid, their odor attracting mice, whose hungry little teeth may work sad havoc ere they are discovered. Spots of iron rust make their appearance with a frequency as remarkable as it is unaccountable. What is worse, no amount of inquiry and no end of cautioning and faultfinding on the part of her who owns the linen lessen it in the slightest degree.

The washboiler is spotless; the metal work on the clothes wringer perfectly galvanized; rope clotheslines are substituted for the wire ones, the faucets in the tubs are of copper; the stopper and chain galvanized; consequently suspicion in these quarters is groundless. The wash basket is guiltless of nails and the clothespins are of wood. The solution of the mystery seems hopeless, and rust spots continue their disfiguring work.

Few, indeed, suspect the service trays of japanned ware and the steel table knives, yet they are very often at the bottom of it, literally as well as figuratively.

A pile of knives is awaiting scouring, and some one tosses a damp and crumpled napkin upon them; a glass of water is upset on a metal tray, no

longer new, and the wet cloth beneath is left to dry where it is; a pitcher of icewater or a cold siphon is left on a napkin-covered tray all night, the moisture that gathers on its surface slowly dripping downward. Any or all of these may be at fault, for the contact of water and iron tends to oxidation of the latter, and rust is speedily formed. At first it may be scarcely perceptible, so faint is the yellow tinge, but with continued contact the color gradually deepens, and washing serves only to set it the more firmly.

Medicine often contains iron in solution, and when some of it spilled on linen or lips wet with it are wiped with a napkin the brown stain peculiar to iron rust is sure to appear. A similar stain is caused by the mingling of starch and a chemical used in the manufacture of inferior wash blue. Nothing but the best blueing should be used for this reason.

The special uses to which linens are put in the household render them liable to stains of all kinds, but with ordinary attention these may be removed before they have fastened themselves permanently. Different kinds of stains require different methods of treatment. When fresh, most of them will yield to harmless measures, but when well dried in, like ink, mildew and rust, they need the action of an acid or of an alkali. Either of these powerful agents will injure the fabric unless handled with rapidity and quickly rinsed in water.

Just as a stitch taken in time will save nine, so will the removal of a spot from a tablecloth often save it from a course through the washtub. Where the laundering is done at home, the saving thus effected may be considerable. The spot of chocolate or coffee, the stains of red wine or of fruit juice may be removed in a moment, when the meal is over, by the simple process of stretching the cloth over a bowl and pouring boiling water through the discoloration. If the wine stain is deep, cover it with salt before scalding.

When the wet spot is half dry a few passes with a hot iron will speedily restore the cloth to proper condition for use. French chalk will often draw out a grease spot not too extensive.

The servant to whom the table linens are intrusted must be taught to carefully inspect each piece before it goes into the receptacle for soiled linens. Not only is time saved by the removal of stains before the linens go into the general wash, but frayed spots are sought and, when discovered, reinforced by careful darning, thus saving off an unsightly rent.

All laundresses know that javelle or chlorine water, salts of lemon and bleaching powder will eat holes into linens unless the latter are repeatedly rinsed in boiling water. But they fail to realize that the rinsing ought to follow after the application of the alkali or the acid, or it is of little use. Housekeepers should impress this fact upon them, or, better still, require them to have the boiling water at hand before beginning operations.

Embroidered linens must always be ironed from the wrong side, in order to throw the pattern in relief. If worked in colors, they are too delicate for ordinary washing. It is therefore best to do them separately, and, to obtain the best results, they must be dipped up and down in tepid soapsuds, hung to dry indoors, and ironed when half dry. If stiffening is considered desirable, gum arabic dissolved in water, or a very thin solution of clear starch answers the purpose.

Obstinate stains in embroidered linens are not of frequent occurrence, but accidents are liable to happen.

Eradicate grease by moistening the spot with ammonia water; then place a clean blotter below the spot, and another above and press firmly with a hot iron.

For fruit stains, rub the spots with a wet cloth dipped lightly into salts of lemon, and rinse immediately in warm water. More than one application may be needed; with constant rinsing the danger to the textile is minimized. If the salts fade the colors, ammonia water will restore them. Ink stains will disappear under similar treatment.—New York Times.

Domestic Hints.

CAULIFLOWER AND POTATO SALAD.—Two cups cold potatoes, one-half cup cold cauliflower. Cut the potato into fine cubes, and mince the cauliflower coarsely. Toss lightly, and serve with a french dressing. Garnish with slices of cucumber.

BLANC MANGE—IRISH MOSS.—Wash carefully one cup of Irish moss and put it in a saucepan with one quart sweet milk. Cover tight and stand it in a pail of boiling water until it begins to thicken. Sweeten and strain into moulds, and when quite firm turn out and serve with sugar and cream.

CRAB CROQUETTES.—Take the meat of boiled hard-shell crabs, about one pound, and gently press out the juice; add one tablespoonful of fine crumbs one-half a teaspoonful of salt, one-half a saltspoonful of pepper, the yolks of two eggs and a very little water. Form into croquettes, roll in crumbs, then in eggs, and then in crumbs again, and fry in hot fat.

SWEETBREAD CROQUETTES.—Prepare two sweetbreads, parboil them and cut in small pieces, cut one can mushrooms into small pieces also. Put into a saucepan one tablespoonful each of flour and butter, and when made smooth add one-half a cup of cream; heat and add the sweetbreads and mushrooms. When very hot take from the fire and add two well-beaten yolks of eggs. When cool form into croquettes and dip in egg and crumbs and fry in hot fat.

CHOCOLATE CREAM.—Soak a third of a box of gelatine in a very little cold water. Put a cup and a half of milk in a saucepan with four ounces of sweet, fine chocolate grated, let it boil until dissolved and add a slightly heaping tablespoonful of sugar. Take two-thirds of the soaked gelatine and put into the chocolate when melted, cool the mixture and turn into a mould, roll the mould from side to side in the hands until it is thoroughly coated with the mixture about a finger thick. When cold, even off the surface with a knife. Whip about half a pint of nice rich cream, sweeten with powdered sugar and flavor with vanilla. Melt the other third of the soaked gelatine in a little boiling water and stir quickly into the cream and fill the chocolate with it. Set on the ice. Serve very cold.

Hints to Housekeepers.

A very young child's mouth should be washed out after feeding with a weak solution of boracic acid.

To make a linseed meal poultice, put a little boiling water into a basin previously rinsed with hot water, and then quickly add, little by little, a sufficient quantity of linseed meal to make a poultice of firm consistence, stirring well the whole time. When it is mixed, spread it thickly by means of a broad knife or spatula dipped in hot water, upon a piece of linen or cotton, or upon tow, leaving an uncovered margin to be turned in over the edge.

Every sickroom should be provided with a thermometer, which should stand upon the dressing table, or be hung against the wall. Unless special orders are given, the temperature should be kept at from 60° to 62° F. In many instances of chest and throat disease, and after certain operations, a higher temperature is necessary; the medical attendant will, in all such cases, give directions at what height the temperature is to be maintained.

In hot weather use potatoes as often as possible in a salad. In this, too, seek variety. There are endless recipes for potato salad. Do not make a salad of old potatoes; the newer they are the more satisfactory the salad. In Germany, potatoes for a salad are always boiled in their skins, and it is a fact that they taste better than when pared before cooking. The neatest method for preparing them is to cut the potatoes into cubes about one-half inch square or in tiny balls with a potato scoop. Do not cut them too thin or small. They break, and nothing looks more uninviting than a mushy potato salad.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, July 23, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	72 1/4 @ 71 1/4	72 3/4 @ 71 3/4
Thursday.....	71 3/4 @ 72 1/4	71 1/4 @ 72 1/4
Friday.....	72 1/4 @ 72 3/4	72 1/4 @ 72 3/4
Saturday.....	73 1/4 @ 73 1/4	73 1/4 @ 73 1/4
Monday.....	72 3/4 @ 71 3/4	72 3/4 @ 71 3/4
Tuesday.....	71 3/4 @ 72 1/4	71 3/4 @ 72 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	32 1/4 @ 31 1/4	31 1/4 @ 31 1/4
Thursday.....	31 3/4 @ 32 1/4	31 3/4 @ 32 1/4
Friday.....	33 1/4 @ 33 1/4	32 1/4 @ 33 1/4
Saturday.....	34 1/4 @ 33 3/4	33 1/4 @ 33 3/4
Monday.....	33 3/4 @ 33 1/4	32 3/4 @ 33 1/4
Tuesday.....	33 1/4 @ 34 1/4	32 1/4 @ 33 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903
Thursday.....	\$1 14 1/4 @ 1 14 1/4	\$1 16 1/4 @ 1 17 1/4
Friday.....	1 15 @ 1 15 1/4	1 17 1/4 @ 1 17 1/4
Saturday.....	1 15 1/4 @ 1 14 1/4	1 17 1/4 @ 1 17 1/4
Monday.....	1 15 @ 1 15 1/4	1 17 1/4 @ 1 17 1/4
Tuesday.....	1 15 1/4 @ 1 16 1/4	1 17 1/4 @ 1 17 1/4
Wednesday.....	1 16 @ 1 15 1/4	1 17 1/4 @ 1 17 1/4

WHEAT.

There have been no pronounced changes in the spot market for wheat since date of last report. There is not much wheat arriving here or being crowded to sale. Wheat ships continue to meet with slow dispatch, clearances of this cereal from San Francisco having hardly averaged a cargo per week for the current month. Shippers are reported to be doing extensive buying in the country, and at relatively higher prices in many instances than are quotable here. It is doubtful, however, if they are getting as much wheat as they are credited with. Considerable of the wheat which is changing hands in the interior and which is supposed to be going to shippers direct is being paid for by interior and other speculative operators. This is not uncommon, much business being done on the same lines every season. The impression that shippers are doing all the purchasing is established by the fact that the same brokers or agents negotiate the bulk of the transfers, and whether they are buying for a country capitalist, a city speculator or a shipper, is not made public. Shippers are in the market for wheat, but there are other buyers in the field, and in numerous instances speculative operators will pay more than warranted by immediate values here or abroad, the buyers expecting a still better market later on. This is very apt to be the case where there is competitive bidding on round lots of especially desirable quality. The ocean freight market is steady. Both ships and wheat are struggling for higher figures, and chances good for wheat receiving a goodly share of any hardening of values which may take place abroad.

California Milling.....	1 18 1/4 @ 1 22 1/4
Cal. No. 1 shipping, alongside.....	1 15 @ 1 16 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 12 1/4 @ 1 12 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	58 3/4 @ 58 1/4	65 1/4 @ 65 1/4
Freight rates.....	36 1/4 @ 38	25 @ 27 1/4
Local market.....	96 1/4 @ 98 1/4	1 15 @ 1 17 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.14 1/4 @ 1.16 1/4.
May, 1903, delivery, \$1.16 1/4 @ 1.17 1/4.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.16 @ 1.15 1/4; May, 1903, \$— @ —.

FLOUR.

Outward movement has been lately of fairly liberal volume and business on local account is fully up to the average for this time of year. No changes are announced in quotable values, but market is moderately firm at current figures, buyers finding it difficult to obtain pronounced concessions. While stocks are sufficient for present needs, holders as a rule prefer carrying rather than make sacrifices to effect sales.

Superfine, lower grades.....	2 40 @ 2 50
Superfine, good to choice.....	2 50 @ 2 90
Country grades, extras.....	3 15 @ 3 25

Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

The market has been inclining against the buying interest, more especially for desirable export grades, owing to a few new buyers being in the field. Some foreign handlers of California barley, who had been securing their grain through the Big Four combine, concluded to do their buying direct and thus save the profit going to the Big Four. But now they find the Big Four selling barley in the United Kingdom for less money by about 50c. per ton than it can be landed there at prices current here, existing freight rates added. Of course, the parties who pay the most here and sell for the least on the other side will do the business. It was always thus, and more so now than ever, with cut-throat competition running rampant in all channels of trade. As soon as the Big Four succeed in knocking their new competitors out of the field, they will endeavor to dictate prices to reimburse them for any losses they may be now incurring. But they may be again confronted with opposition. Combines, no matter how powerful, do not always have everything their own way.

Feed, No. 1 to choice.....	91 1/4 @ 92 1/4
Feed, fair to good.....	87 1/4 @ 91 1/4
Brewing, No. 1 to choice new.....	95 @ 97 1/4
Brewing, old.....	1 00 @ 1 05
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

OATS.

The market continues decidedly quiet. Although values are at low levels, buyers show no disposition to take hold freely. That trade will be of a rather slow order for some weeks to come is probable. This is a natural sequence of the inflated values experienced the past few months for this cereal. The oats of last crop got largely into speculative hands the latter part of the season. A few were lucky enough to close out in time and pocket big profits, but a number of holders were scorched in the wind-up. "A burnt child dreads the fire" for awhile. Oats are low enough, in fact, are too low as compared with other cereals, and will doubtless be freely consumed as soon as the adjustments of trade will enable small buyers to get the benefit of present wholesale values.

White Oats, fancy feed.....	1 30 @ —
White, good to choice.....	1 25 @ 1 27 1/2
White, poor to fair.....	1 10 @ 1 15
Gray, common to choice.....	1 10 @ 1 25
Milling.....	1 30 @ 1 32 1/2
Surprise, good to choice.....	1 30 @ 1 35
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 15

CORN.

The market for this cereal is showing very little life. Beyond asking figures, there is not much at present upon which to base quotations. Very little corn is being consumed here, and this will continue to be the case so long as prices are held at or near existing high levels.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 47 1/4 @ 1 52 1/4

RYE.

Prices remain quotably about as last noted. There is not much arriving, but it is reported that negotiations are under way for interior transfers on foreign account.

Good to choice.....	82 1/4 @ 87 1/4
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BUCKWHEAT.

None arriving from any quarter, and no special inquiry. In consequence of the prevailing inactivity, quotations for the time being are wholly nominal.

Good to choice.....	1 55 @ 1 70
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BEANS.

The bean market shows the same inactive condition previously noted. The shipping and local demand is at present of rather light proportions, but there are no great quantities of beans now arriving, and no special crowding to sale of spot stocks. Holdings are principally in second hands. With the desire to do some business, dealers are disposed to grant moderate concessions rather than miss sales, but were there anything like active inquiry, the payment of full current quotations or slightly higher figures would be necessary to effect free purchases.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 60
Lady Washington.....	2 40 @ 2 65
Pinks.....	2 00 @ 2 10
Bayos, good to choice.....	2 75 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	3 00 @ 3 25
Limas, good to choice.....	3 65 @ 3 75
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Market is dull and presents no new features. Stocks of domestic Niles Peas are

virtually exhausted and there are none of this description offering to arrive. Green Dried are in more than ample supply, most of the local millers having all they care to carry.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

While the demand is good for bright and free wools, and the market firm in tone, some round lots have recently changed hands at less than prices paid in the interior for the same wools. Under undue competition and excessive rivalry among a few dealers to secure wools, prices in some parts of the interior were crowded to higher points than warranted by values obtainable here or East. Offerings of Fall lambs' wool have not thus far lacked for attention, and sales of the same have been in the main at comparatively good figures.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foot hill.....	11 @ 13
Oregon Valley, fine.....	14 @ 15
Oregon Valley, coarse to medium.....	12 @ 13
Eastern Oregon, choice.....	12 @ 14
Eastern Oregon, fair to good.....	10 @ 11
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

Hops of coming crop are reported having been contracted for in Oregon at 20c per pound, and the same or higher figures are being asked for best qualities in this State. Dealers and speculative operators do not appear to be very anxious about purchasing at 20c and upward for forward delivery, notwithstanding the strong tone. Spot stocks are very small and are quotable nominally 19@21c for good to choice. The New York market is quoted at 19@23c as to quality for Pacific Coast hops of last crop.

HAY AND STRAW.

Although arrivals of new hay have been of quite liberal proportions, there have been no special accumulations of offerings, buyers taking hold quite freely, particularly of high grade stock. For best grades of new the market is showing steadiness. Seldom has the quality of hay been of such high average as the current season, and to this fact is greatly attributable the present rather healthy condition of the market for this time of year.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	5 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3 bale.....	40 @ 50

MILLSTUFFS.

Bran and Middlings continue to command stiff prices, with arrivals and offerings of quite moderate volume, and these mainly from Oregon and Washington. Rolled Barley was not quotably higher, but market was decidedly firm at the rates current. In Milled Corn the trade was of a light order, and values were barely steady.

Bran, 3 ton.....	19 50 @ 20 50
Middlings.....	22 50 @ 24 50
Shorts, Oregon.....	20 00 @ 22 00
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

Same inactivity is prevailing in this department as previously noted. Most kinds are in such limited stock as not to admit of any noteworthy or wholesale business. In quotations there are no changes to record, but in the prevailing dullness values are not very clearly defined.

	Per ctt.
Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 50 @ 3 75
Mustard, Trieste.....	3 30 @ 3 60
	Per lb.
Canary.....	3 1/4 @ 3 1/4
Rape.....	1 1/4 @ 1 1/4
Hemp.....	3 1/4 @ 3 1/4

BAGS AND BAGGING.

Asking rates for Grain Bags appear to be at about same level as last quoted. Present holdings of dealers are likely to prove more than ample for the unprovided needs of farmers during the balance of the season. Stocks are mainly in few hands, however, and with practically no competition among sellers, prices asked are maintained without trouble, regardless of whether few or many bags are called for. Fruit sacks are going forward to interior points in considerable quantity, values for the same remaining practically unchanged.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/4
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/4 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Demand continues good for Hides and market is firm at the figures current. Pelts are in moderate request and values are without quotable change. Tallow is meeting with ready sale at figures quoted, demand being active for shipment.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @—	9 @—
Medium Steers, 48 to 56 lbs.....	10 @—	8 @—
Light Steers, under 48 lbs.....	9 @—	7½ @—
Heavy Cow Hides, over 50 lbs.....	9½ @—	8 @—
Light Cow Hides, under 50 lbs.....	9 @—	7½ @—
Stags.....	7 @—	— @—
Wet Salted Kip.....	9 @—	8 @—
Wet Salted Veal.....	9½ @—	8½ @—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @16½	15 @—
Dry Kip and Veal, 11 to 16 lbs.....	13 @—	11 @—
Dry Calf, under 4 lbs.....	18 @—	16 @—
Salted Horse Hides, large.....	2 75	@3 00
Salted Horse Hides medium.....	2 25	@2 50
Salted Horse Hides, small.....	1 50	@2 00
Dry Horse Hides, large.....	1 75	@—
Dry Horse Hides, medium.....	1 50	@—
Dry Horse Hides, small.....	1 25	@—
Dry Colts' Hides.....	50	@—
Pelts, long wool, 3 skin.....	80	@1 30
Pelts, medium, 3 skin.....	50	@75
Pelts, short wool, 3 skin.....	30	@40
Pelts, shearling, 3 skin.....	15	@30
Deer Skins, best summer.....	35	@—
Deer Skins, good medium.....	—	@30
Deer Skins, thin winter.....	—	@20
Elk Hides.....	10	@12
Tallow, good quality.....	5½	@—
Tallow, No. 2.....	4½	@4½
Goat Skins, perfect.....	30	@37½
Goat Skins, small.....	10	@20
Kid Skins.....	5	@10

HONEY.

There are moderate quantities arriving, with asking figures in the main above the views of wholesale operators. Business doing at present in this center is principally of a small jobbing or retail character, and in this way transfers are being made at an advance on any figures which would be warranted as quotations based on values for round lots.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/4 @ —
Extracted, Amber.....	4 @ —
White Comb, 1 lb frames.....	10 @ 12 1/4
Amber Comb.....	7 @ 10
Dark Comb.....	6 @ 7

BEESWAX.

Not much coming forward and very little in store here. Offerings meet with prompt custom at full prevailing rates.

Good to choice, light, 3 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is selling at much the same figures as for several weeks past, with a little better demand from consumers, but supplies ample. Values for Mutton are fairly steady, with inquiry moderate. There are no excessive offerings of choice Veal or Lamb, and current prices for both are being well maintained. Hogs are in good request, with market firm at last quoted advance.

A subscriber would like to have live cattle quoted and we would be pleased to do so, were it possible to give correct values, but the manner in which the business is conducted does not permit of giving accurate quotations. Wholesale dealers in cattle have no fixed figures which they strictly adhere to in buying. Not even do they have a fixed percentage of shrinkage, changing both on the same market to suit individual cases, being governed by the presence or absence of competition, the desirability of the stock, etc. There are fixed values for dressed beef, and sellers of cattle can determine by these figures what they should receive. The price paid for live is generally fully as much or more per pound, the customary shrinkage deducted, than is charged for dressed, the profits of handling being realized on the shrinkage.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ 7
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/4 @ 6 1/4
Hogs, small, fat.....	6 1/4 @ —
Hogs, large, hard, over 250 lbs.....	6 1/4 @ —
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	8 @ 8 1/4
Veal, small, 3 lb.....	8 @ 9 1/4
Veal, large, 3 lb.....	7 @ 8 1/4
Lamb, spring, 3 lb.....	9 @ 9 1/4

POULTRY.

The improved tone noted in last review continued into the current week. There were no special changes in quotable rates, but all offerings in prime to choice condition moved steadily as a rule at full current figures. Demand was mostly for Chickens, choice young and large and fat old receiving the preference. Sales of extra large chickens in fine condition were made up to \$8 per doz., but such stock is too scarce to warrant the figures being given as a regular quotation.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1 lb.....	13 @ 14
Turkeys, alive, Gobblers, 1 lb.....	13 @ 14
Hens, California, 1 dozen.....	4 50 @ 6 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	5 00 @ 6 50
Fryers.....	3 50 @ 4 50
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	2 25 @ 2 50
Ducks, old, 1/2 dozen.....	2 50 @ 3 00
Ducks, young, 1/2 dozen.....	3 00 @ 4 00
Geese, 1/2 pair.....	1 25 @ —
Goslings, 1/2 pair.....	1 25 @ —
Pigeons, old, 1/2 dozen.....	1 50 @ 1 75
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Prices have been again marked up from 1@2c per pound over the figures ruling the preceding week. Values will continue on the up grade until trade is crowded on to cold storage stock, when fresh will likely accumulate and prices for same suffer a relapse.

Creamery, extras, 1/2 lb.....	24 @ —
Creamery, firsts.....	23 @ —
Dairy, select.....	22 1/2 @ —
Dairy, firsts.....	21 @ —
Dairy seconds.....	19 @ 20
Mixed store.....	17 @ 18

CHEESE.

Market is firm and higher, with arrivals of quite moderate volume and spot offerings by no means heavy. A large portion of local holdings is in cold storage, and this cheese is practically off the present market.

California, fancy flat, new.....	10 1/2 @ 11
California, good to choice.....	10 @ —
California, fair to good.....	— @ —
California, "Young Americas".....	10 1/2 @ 11 1/2

EGGS.

As foreshadowed in our last review, higher prices have been established in the egg market, with a decidedly firm tone for strictly choice to select, and values still on the up grade. Eastern markets are against buyers. No. 1 Eastern cannot now be landed here for much less than 23c per dozen in carload lots.

California, select, large, white and fresh.....	21 @ 25
California, select, irregular color & size.....	21 @ 23
California, good to choice store.....	19 @ 20

VEGETABLES.

Onions were not in very heavy receipt, and with fair demand, including some inquiry on Eastern account, the market showed more firmness, there being an advance in asking figures of about 10c per cental. Present offerings are principally Yellow or White, the season for Red being practically ended. Green Peas continued to arrive sparingly, and for select the market favored sellers. Most other vegetables now in season were in more than ample supply for immediate requirements, and the market as a whole inclined in favor of consumers. Changes effected in quotations were almost without exception to lower ranges of values.

Asparagus, 1/2 box.....	— @ —
Beans, String, 1/2 lb.....	1 1/2 @ 4
Beans, Wax, 1/2 lb.....	2 @ 3 1/2
Cabbage, choice garden, 100 lbs.....	75 @ —
Corn, Green, Alameda, 1/2 crate.....	1 25 @ 1 75
Corn, Green, 1/2 sack.....	75 @ 1 25
Cucumbers, 1/2 large box.....	30 @ 60
Egg Plant, 1/2 large box.....	1 00 @ 1 25
Garlic, 1/2 lb.....	2 @ 2 1/2
Onions, Yellow Danver, 1/2 cental.....	90 @ 1 00
Onions, New Red, 1/2 cental.....	— @ —
Okra, Green, 1/2 box.....	90 @ 1 00
Peas, Sweet garden, 1/2 lb.....	3 @ 4
Peas, good to choice, 1/2 sack.....	— @ —
Peppers, Green Chile, 1/2 box.....	40 @ 65
Peppers, Bell, 1/2 box.....	75 @ 1 00
Rhubarb, 1/2 box.....	30 @ 50
Summer Squash, Bay, 1/2 large box.....	50 @ 65
Tomatoes, 1/2 small box.....	35 @ 60
Tomatoes, River, 1/2 large box.....	1 00 @ 1 25

POTATOES.

Increased arrivals of potatoes since last review, with no corresponding increase in the demand, has resulted in a materially lower and weak market. There has been almost an entire absence of shipping demand the current week, and trade on local account has been rather under than above the normal. That the market will long remain inactive is wholly improbable, but it is not likely that prices will in the near future be on as high levels as for some time past.

Burbanks, Salinas, 1/2 cental.....	1 00 @ 1 25
River Burbanks, good to select, 1/2 cental.....	40 @ 1 00
Early Rose.....	50 @ 60
Garnet Chile.....	70 @ 80

The Fruit Market.

FRESH FRUITS.

Summer fruits of most kinds were in liberal receipt, with the market in the main easy in tone, although in the matter of quotable values there were no pronounced changes. Black Grapes put in an appearance from Arizona, the initial shipment bringing \$1.50 per crate. Fontainebleau Grapes arrived from Vacaville and they also found custom at \$1.50 per crate. Apricots were not in particularly heavy receipt, and choice Yellow were in good request at full current rates from both canners and retailers. Ordinary qualities were not specially sought after, however, and found custom only at rather low figures. Common White Apricots were particularly difficult to place to advantage. Bartlett Pears are arriving in moderate quantity, with sales of No. 1 stock mainly at 90c. @ \$1 per box, No. 2 or windfall stock ranging down to 50c. per box. Some extra choice, wrapped, especially desirable for shipment, were salable at \$1.25. Apple market was quiet for other than most select, suitable for shipment. For strictly choice Gravenstein, four tiers to the box, \$1.25 was obtainable in a limited way. Peaches were in fair request at values much the same as were current the preceding week, choice Yellow being most in favor and commanding best average figures. Plums were in liberal receipt and were fully as cheap as last quoted. Watermelons, other than large sizes, and Cantaloupes and Nutmeg Melons inclined in favor of buyers, with arrivals fairly liberal. The Berry market was materially firmer under decreased offerings. Longworth Strawberries and fancy Raspberries were especially favored in the matter of bringing improved figures.

Apples, 1/2 fancy, 4-tier box.....	1 00 @ 1 25
Apples, good to choice, 1/2 50-lb. box.....	75 @ 1 00
Apples, common to fair, 1/2 50-lb. box.....	50 @ 65
Apricots, Royal, 1/2 crate.....	40 @ 75
Apricots, 1/2 ton.....	10 00 @ 22 50
Cantaloupes, Winters, 1/2 crate.....	1 75 @ 2 25
Cherries, Black, 1/2 box.....	40 @ 60
Crabapples, 1/2 small box.....	25 @ 40
Blackberries, 1/2 chest.....	2 50 @ 4 00
Raspberries, 1/2 chest.....	5 00 @ 8 00
Currants, 1/2 chest.....	2 00 @ 4 00
Logan Berries, 1/2 chest.....	2 50 @ 4 00
Nutmeg Melons, 1/2 small box.....	50 @ 60
Peaches, 1/2 box.....	25 @ 60
Peaches, 1/2 basket.....	25 @ 60
Pears, Bartlett, No. 1, 40-lb. box.....	90 @ 1 10
Pears, small, 20-lb. box.....	35 @ 50
Plums, choice large, 1/2 box or crate.....	40 @ 60
Plums, small, 1/2 box.....	25 @ 40
Prunes, Tragedy, 1/2 crate.....	35 @ 50
Strawberries, Longworth, 1/2 chest.....	7 00 @ 9 00
Strawberries, Melinda, 1/2 chest.....	3 00 @ 5 00
Watermelons, 1/2 doz.....	1 25 @ 3 00

DRIED FRUITS.

The scramble to secure Apricots to turn in on July contracts has been a leading feature of the week, with indications at this writing that there will be some shortages in July deliveries. The majority of dealers are still bearish in their talk, and claim that there will be no trouble in filling short sales at profitable figures after the current month. It is the exception where handlers are bidding over 5c. in the sweat boxes for August and later deliveries, and on small fruit down to 4c., with considerable of the latter this season. Some shipments in carload lots are now being made to Eastern points, with prospects of there being a considerably larger and more active movement outward at an early day. Prunes are reported as still being shorted by some handlers on the selling basis of 2 1/2c. for the four sizes, Santa Claras, while other dealers do not deem it prudent to shorten the market further on the above basis of values. Growers are contending for at least the same figures that the market is being shorted at by dealers. Most of the Prune futures are for October delivery. Latest advices from France are to the effect that the crop there is still less promising than recently stated. Outside of Apricots and Prunes, there is very little doing at present in the dried fruit line. Dealers quote evaporated Apples, good to choice, 6@6 1/2c. for October, and Pears 6@7c. in carload lots at primary points. New Peaches are quoted for early deliveries at 4 1/2@6c. in sacks, carload lots, as to quality. In old fruit there is not much doing and not much upon which to operate, only small quantities of Peaches, Plums and Prunes, which are moving in a moderate way out of second hands at practically the same figures which have been current for weeks past.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	— @ —
Apricots, Royal, good to choice, 1/2 lb.....	6 @ 6 1/2
Apricots, Royal, fancy.....	7 @ 7 1/2
Nectarines, 1/2 lb.....	— @ —
Peaches, unpeeled, choice.....	— @ —
Peaches, peeled, in boxes.....	— @ —
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2@3c; 50-60s, 4@4 1/2c; 60-70s, 3 1/2@3 3/4c; 70-80s, 3 @ 3 1/2c; 80-90s,	

2 1/2 @ 2 3/4c; 90-100s, 2c @ 2 1/4c; these figures for 1901 crop.

COMMON SUN-DRIED.

Apples, sliced.....	— @ —
Apples, quartered.....	— @ —
Peaches, unpeeled.....	— @ —
Pears, prime halves.....	— @ —
Plums, unpitted, 1/2 lb.....	1 1/4 @ 2 1/4

RAISINS.

Stocks of last crop are of small volume and in few hands. There was a fair jobbing trade at quotably unchanged rates. The coming crop of several vineyards is reported contracted for at 3 1/4@3 1/2c in the sweat boxes.

CITRUS FRUITS.

The market is about bare of Oranges, and inquiry for them is also lacking. Lemon market has lacked firmness, despite warm weather and a very fair demand for citrus fruit. Quotations for Limes were marked down 50c per case.

Lemons—California, select, 1/2 box.....	3 00 @ —
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Grape Fruit, 1/2 box.....	2 00 @ 2 50
Limes—Mexican, 1/2 box.....	4 00 @ 4 50

NUTS.

Market is almost bare of Almonds and Walnuts, and such as are left are mostly of very ordinary quality. Some speculative operators are reported shorting the market at 10 1/2c for the Hatch varieties in carload lots at producing points. Peanut market is firm at quoted advance, with stocks and offerings light.

California Almonds, shelled.....	15 @ 18
California Almonds, paper shell, 1/2 lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	11 @ 12
Cal. White Walnuts, No. 2 soft shell.....	9 @ 10
Cal. White Walnuts, No. 1 hard shell.....	9 @ 10
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 7

WINE.

The wholesale market is quiet and without quotable change for last year's product, the quotable range of values for dry wines of 1902 vintage being nominally 20@25c. per gallon. The California Wine Association has fixed the following prices for this season's grapes in the San Joaquin valley: Choice black for sweet wine, \$16 per ton; Faher-Zagos, \$16; Sultanas and Bergers, \$15; Malagas, \$14; Muscats, second crop, \$12. About same figures are expected to rule in Sacramento valley for same varieties of grapes. Prices for dry wine grapes have not yet been fully determined on, but it is believed that some choice Northern will command \$25, the probable quotable range being \$21@25 per ton for No. 1 to select Northern dry wine grapes.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	140,030	245,066
Wheat, centals.....	104,585	184,386
Barley, centals.....	40,252	86,259
Oats, centals.....	9,049	34,395
Corn, centals.....	1,899	2,509
Rye, centals.....	1,650	2,850
Beans, sacks.....	1,369	3,225
Potatoes, sacks.....	28,662	49,107
Onions, sacks.....	3,102	5,694
Hay, tons.....	4,445	8,333
Wool, bales.....	829	3,434
Hops, bales.....	4	4

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	66,324	152,056
Wheat, centals.....	85,161	147,693
Barley, centals.....	9,445	19,005
Oats, centals.....	682	3,227
Corn, centals.....	1,462	2,433
Beans, sacks.....	339	575
Hay, bales.....	1,885	4,493
Wool, pounds.....	..	168,700
Hops, pounds.....	..	11,535
Honey, cases.....	20	23
Potatoes, pack's.....	1,599	2,896

California Dried Fruit at New York.

NEW YORK, July 23.—Evaporated apples, common, 8@10c; prime wire tray, 10 1/2@10 3/4c; choice, 11@11 1/4c; fancy, 11 1/2@12c.
California Dried Fruits.—Stocks of old very light. Market generally firm and in good shape for early arrivals of new.
Prunes, 3 1/2@6 1/2c.
Apricots, boxed, 10 1/2@14c; bags, 10@12c.
Peaches, unpeeled, 8 1/2@10 1/2c; peeled, 12@16c.

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FRUIT MARKETING.

Almond Crop of Malaga, Spain.

Special report by the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS.

The two most famous and popular grades of almonds known to commerce are Jordans and Valencias. These products are marketed almost exclusively at Malaga. As a matter of fact Jordan almonds are produced only in the Province of Malaga and to a small extent in the adjoining Provinces of Granada and Almeria.

Valencias are produced all along the coast from Alicante to Estepona. Although they bear the name of the third largest city in Spain (Valencia) they do not enter into commerce of the latter city at all, but are, as I have said above, marketed exclusively at Malaga. Both grades are exported in large quantities direct from Malaga to the United States and always as shelled almonds. They ripen in the late summer and are exported principally during the months of September, October, November and December.

The present prospect is for a fairly good crop, and this would mean from 75,000 to 85,000 boxes of Jordans and from 150,000 to 175,000 boxes of Valencias. The indications were about the same at the same period of last year and were fully realized.

There are at present only a few hundred boxes of Jordans left over in stock in Malaga and perhaps 2000 boxes of Valencias. The last sales were made f. o. b. Malaga at \$8.25 for Jordans and \$3.50 to \$4.00 a box for Valencias.

It is reported here on good authority that Italy will not have more than a half crop this year, particularly in the famous Bari district. As a consequence, Malaga exporters are expecting a slight advance on last year's prices, which were themselves higher than for any previous year.

Freight rates are from 35s to 40s per Malaga ton of eighty boxes to New York and Boston. During the calendar year ending December 31, 1901, 30,000 boxes of Jordan and 35,000 boxes of Valencias were exported direct from Malaga to the United States.

BENJ. H. RIDGELY, U. S. Consul.
Malaga, Spain, June 20, 1902.

French Almond and Walnut Crop.

Special report by the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS.

The nature of the almond trade of the Marseilles district with the United States, formerly much larger, is shown by the declared value of the exports during ten months ending May 31, 1902, which was as follows:

In the shell.....\$ 36,524
Unshelled..... 134,901

The business is to a large extent concentrated in the small town of Aix-en-Provence, about one hour's ride from Marseilles, although the shipments are all made through this city.

The varieties now mainly grown in this region are the Princess or Sultan (thin shell), the soft shell, the hard shell, and the very hard shell. The crop will not be gathered until October. I have been favored with the views as to the growing crop by the most important dealer in this city, if not in the world, who has agents in all the centers of production, from whom he receives frequent reports. I translate his letter as follows:

FRANCE. — In the lower part of Provence, where we look for almonds sold in the shell, the crop will be good. In the northern departments, the Basses, Alpes, Vaucluse, and Drome, I look for a half crop.

ITALY.—In southern Italy, la Pouille, and around Bari, the crop was damaged

by frost during the month of March, and the product will be very light. As these provinces export shelled almonds very largely, the probable deficit is a cause or at least incentive to high prices for shelled nuts.

SICILY.—Here I look for a medium half crop.

SARDINIA.—Here also they tell me that there will be a half crop.

SPAIN.—A fair crop may be expected. Some damage is reported from Carthagena, but this should not have a great influence upon general results. Fairly good returns are expected from the regions roundabout Tarragona, Reus, and Alicante.

BALEARIC ISLANDS.—Fairly good crop.

PORTUGAL.—Crop will be a little less than average.

MOROCCO.—A good crop expected.

I am advised by F. M. Bremond that because of the destruction of a portion of the Italian crop "high prices must be expected for a long time and with no hope of a drop. Many think that there will be a rise of \$5.79 to \$7.72 per 220 pounds spot and future delivery. It is certainly prudent to do a little buying now."

Very little information is now available concerning walnuts. Marseilles dealers supply themselves from the Grenoble region, and their reports have not yet begun to come in.

ROBERT P. SKINNER,
U. S. Consul General.
Marseilles, France, June 26, 1902.

Malaga, Spain, Raisin Crop.

Special report by the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS.

In answer to the inquiries of the Pacific Commercial Museum of San Francisco, it may be stated in a general way that the present outlook is excellent and compares quite favorably with the outlook at the same period of 1901.

The stocks of last year's crop now on hand are small, amounting probably to not more than 25,000 boxes and these of inferior quality. As to the high grades of clusters there are none now in stock.

Last year's crop amounted to 1,200,000 boxes and was the largest crop Malaga has marketed since the ravages of the phylloxera some fifteen years ago.

It may interest American growers and exporters to know that in the natural course of things, out of a total crop of 1,200,000 boxes, 400,000 boxes should be choice Malaga clusters, the remainder layers and loose raisins.

During the year ending December 31, 1901, 76,000 boxes of Malaga raisins were exported direct from Malaga to the United States, as against 53,000 boxes in 1900.

The freight charges are as follows from Malaga to New York: 35s per Malaga ton of ninety boxes of twenty-two pounds each; Malaga to Boston, 40s and 10%; to Philadelphia, 45s and 10%.

BENJ. H. RIDGELY, U. S. Consul.
Malaga, Spain, June 20, 1902.

Like other evils cramps and diarrhoea come suddenly. Promptly give a dose of Perry Davis' Painkiller and the pains will go immediately. A bottle at hand will save hours of suffering—be prepared.

A Story of the Prairie

The Century Magazine is about to print a serial which will have an especial interest to people who are at home on the prairies. It is called "The Biography of a Prairie Girl," and the author is Eleanor Gates, a young woman who spent her childhood in Dakota and who thus writes from the closest personal observation.

The time of Miss Gates' story is about twenty-five years ago; it is put in the form of a personal narrative of the life of a little girl, and there is hardly a phase or event of prairie life which is not touched upon in these pages—the blizzard, breaking colts, horse stealing by Indians, school days on the frontier, fighting gophers and badgers, cattle raising, and other typical phases of hardship or prosperity.

It is not a novel, but the same characters appear and reappear in the story with a reality which impresses the reader with confidence in the truth of the narrative.

"The Biography of a Prairie Girl" will begin in the August number of The Century and it will be illustrated.



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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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"Under instructions from the President, who was the chief influence in securing the legislation needed, the Interior Department will go carefully and cautiously in developing the great work. It is a new and untried field, with fruitful possibilities for costly blunders. Secretary Hitchcock undertakes a responsibility heavier than any that can fall upon his successors, for it is he who must lay the foundation for the water system in sixteen States and Territories for the reclamation of 100,000,000 acres of land. The legal, engineering and financial questions involved are of such importance that he has resolved to make haste slowly.

GEOLOGICAL SURVEY.—"The man upon whose shoulders falls most of the work in mapping out and executing this great scheme of government irrigation is F. H. Newell, chief of the Division of Hydrography of the Interior Department. For fourteen years Professor Newell has been looking forward to the passage of the act for which Congress has just authorized the work and provided funds for its execution. During that time he has had in training young engineers in the field, gathering data of the location and character of the public lands, sources and extent of water supply, available reservoir sites, nature of the local laws governing riparian rights, etc. A vast amount of preliminary information is therefore on hand, which will serve the double purpose of saving time and preventing mistakes.

"The Division of Hydrography, under the Geological Survey, is to work out the details of the government reclamation of arid lands. For a long time nothing but the most general features of the plan can be perfected. There can be no actual digging and dam building and pipe laying until the surveys are made embracing both the water source and supply and the land to be irrigated. Private claimants of water and land must be dealt with, and State and Territorial laws obstructing the government must be faced. Possibly in some States the irrigation laws will have to be amended before work can be done in the manner required by the recently enacted law. In many cases interstate projects will require patient and delicate handling, in order that water from one State may be utilized to irrigate lands in other States.

FINANCIAL CONSIDERATION.—"If the problem before the Department were merely to select a body of good public land with an adequate water supply and reservoir site above it, and to build the works that would marry water and land, it would be an easy thing. But other questions are involved. First, would it pay? The government is not proposing to irrigate public lands for nothing. It must get its money back. It is no particular hurry about it, but it must get its money back from each system or the whole scheme will fall to the ground. The land reclaimed from aridity must actually sell for enough to pay for the irrigation works. We must go slow and consider many things. It is a foregone conclusion that we cannot build these works as fast as people would like; but when we do build, we hope to build for all time, and, in the course of a good

many years, we expect to have much of the arid West reclaimed and blossoming with fruits and grain.

SEEKING OPPORTUNITIES.—"It has been suggested to Secretary Hitchcock what was desired to be done as preliminary to the execution of the act of Congress. This is to throw out survey parties into as many of the sixteen arid States and Territories as possible—probably all of them—and seek out the available projects. To do this some of the money now on hand will have to be allotted. The receipts of public land sales in arid States and Territories for the past fiscal year have not been figured up, but there will be in the neighborhood of \$5,000,000 available in the arid land reclamation fund; so there is no lack of money with which to begin operations.

"Before any project reaches the stages of actual construction it is intended to have every item concerning it figured down, all questions of title settled, all obstacles caused by local irrigation laws removed, and assurance that sales of land under the system will reimburse the government. When a project has reached this stage of survey and estimate it will be submitted to expert and disinterested engineers for their professional opinion, so that the secretary will not feel that he is relying wholly upon the judgment of one office. If the project is approved we shall then ask the secretary for authority to construct the system.

"Each system naturally will be distinct, and will be placed preferably under direct supervision of the

engineer who surveyed and planned it. The work, whether dam building, earthwork ditches, flumes, artesian wells or what not, will probably be done by contract under our supervision.

THE LAW.—"The impression has gone out that we are to enter upon the construction of the Gila river, Truckee river and St. Mary's river projects before perfecting other surveys. This is erroneous. These three projects are perhaps further along than others, and were cited as typical ones when the plan was under consideration of having the government build one or two experimental systems. But the act is much broader than then proposed. It authorizes the Secretary to build where he pleases. It is our idea therefore, to make surveys in all of the sixteen States and Territories interested before deciding upon any particular project. We may find new projects where, for certain reasons, such as demand for lands, abundance of water, etc., it may be desirable to enter upon construction soon. All projects actually approved after investigation will be constructed together.

"It is under President Roosevelt's express direction, and in accordance with Secretary Hitchcock's plans that the development of the national irrigation system shall proceed with deliberation and caution. The public should, therefore, bear in mind the magnitude of the work and wait with patience the unfolding of what is believed to be a practical and business-like plan to reclaim the waste places of the West."

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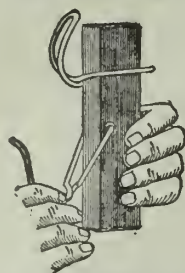
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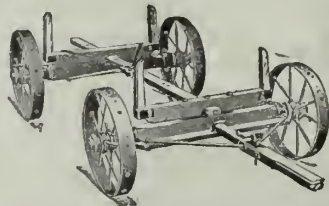
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FRUIT MARKETING.

Growing Deciduous Fruits for Distant Shipment.

By HON. ALDEN ANDERSON, general manager of the California Fruit Distributors, in the Sacramento Bee.

The growing of deciduous fruits for profit in northern California is such a broad subject, and one upon which so much would depend on the location, character of soil, variety of fruit and facilities for shipment, that no set rules as a guide for action can be given.

ABOUT PLANTING.—The best advice I know of for the intending orchardist is to go into the locality where the proposed orchard is to be planted and be guided by the experience of disinterested orchardists there, and to adhere, in the main, to those varieties of fruit that have in the past proved most remunerative in that particular district.

We often hear the cry of overproduction, but this is an old one and has been heard as long as orchards have been planted in California on a commercial basis. It must be remembered that the market is gradually extending for all California fruits; and as the tonnage increases the tendency will be to an improvement in methods of handling and a reduction of all incidental rates and charges, so that with the position already secured I cannot see any reason why horticulturists should not enjoy the same or a better measure of prosperity in the future than in the past.

It is not necessary—and is in some respects, notably that of labor, a handicap—to have too large an acreage in one orchard. The most generally successful orchards have been the smaller ones, say twenty to forty-acre tracts, on which the owner lives and which he manages himself.

There is no pleasanter work than the caring for an orchard and the harvesting of the fruit. Except during ripening time there is nothing to call for unusual attention or exertion. It requires some knowledge, it is true, but the work is clean and healthy, and those who get acquainted with its details rarely give it up for any other occupation.

In regard to a selection of a location for the orchard, much will depend upon the varieties of fruit intended to be planted. Enough experimenting has already been done to define the areas wherein most kinds of fruit will best thrive.

It would be absolutely impossible to advise what to plant without knowing the character and soil, altitude, facilities for shipment, comparative time of ripening, etc.

A given fruit might be a success in one character of soil and a rank failure in another. If in an exposed place and subject to late frosts, varieties least subject to frost damage should be selected. Again, one locality might have facilities for shipping fruit in the fresh state, and the trend would be in the direction of shipping fruits, with the choice of varieties determined by the time of ripening—i. e., whether in an early or a late district. If in an early district, a large proportion of varieties known as "early shippers" would undoubtedly be selected. If in a late district, varieties for shipment or for canning and drying might be selected, and so on through the list.

THE CHERRY.—I will name some of the varieties generally planted, and in the order of their ripening, commencing with the first tree fruit to ripen—the cherry. The Purple Guigne is the very earliest variety of any merit, and while a good fruit is a very shy bearer. It is well to have a few of these for variety, but very many would not prove profitable.

The Governor Wood, Cleveland and Rockport Bigarreau are next in order, and are known as white cherries from their color. They are not much esteemed commercially, but are good bearers and do a good part as cross fertilizers to more valuable varieties. The Black Tartarian is probably the most extensively planted and highly prized as a table variety. It is a splen-

did shipper. The Royal Anne or Napoleon Bigarreau is a later white variety, and besides being a good shipper is the standard variety for canning. The Black Republican ripens about the same time as the Royal Anne, is a good bearer and splendid shipper, being the firmest cherry grown.

After cherries, the next in order of ripening is the apricot. The Pringle, a small clingstone, is the earliest, but is only sparingly planted in the earliest districts. This is followed by the New-castle, with its recommendation of being early. The Royal is next, and so far is the most generally favored. It is reasonably early, can be shipped, canned or dried, and is a heavy bearer. The Moorpark, at one time the favorite, is now seldom planted, on account of shyness of bearing. Apricots have been and undoubtedly will continue to be one of our most profitable crops. The area where they can be successfully grown is limited, and the market for them—canned or dried—is being gradually extended.

PEACHES.—In peaches the Alexander, a small, white clingstone, is the first variety to ripen, and is fit only for the table. It is followed by the Hale's Early, a little larger peach, but with the same general characteristics. The St. John is the first yellow free to ripen, and while it can be dried is seldom used for that purpose, being essentially a shipping variety.

The Early Crawford is the first peach for general use to ripen, as it is used for shipping, canning or drying. It is a good shipper, but for canning is little used now, except to fill in with between different packings at the cannery. It dries too light to be planted solely for drying.

Mary's Choice is of the same general character as the preceding, but is a little easier propagated, being a more even bearer and requiring less thinning.

The Susquehanna, Lovell and Piquett's Late are yellow frees, and can be used for either canning or drying. The Muir is the most popular at the present time as a drying peach, being more sought after dried than any other variety. It is also splendid for canning and is a heavy and regular bearer.

The Salway, the latest freestone, is used for either shipping, canning or drying and in a few localities is very profitable.

The clings are used almost wholly for canning purposes, and, if convenient to canneries, are popular with growers, although at times they are shipped and dried. The Orange is the first to ripen, followed by the Lemon, Golden, Tuscan, Philips and George's Late.

PEARS.—The Bartlett is the most generally planted pear at present, and is equally valuable for shipping, canning or drying, as best suits the convenience of the grower or the state of the market. It is the only pear used for canning and drying. Later shipping varieties that do well are the Doyenne du Comice, Winter Nelis and Easter Beurre.

Pears are not of late being planted in quantities such as their importance and value would suggest. This fact arises to a large extent because of the ravages of the pear root aphid—a pest that feeds on the roots of the tree and for which no remedy has as yet been found. Experiments are being carried on with the hope of finding a resistant or immune stock. When this is found it would be hard to go amiss in planting pears.

PRUNES AND PLUMS.—Prunes and plums, aside from the French prune, are not canned as much as formerly, and their chief use at present is for

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shipping in a fresh state. The heaviest plantings of plums of late have been of the Japanese varieties. These are generally quick growers and heavy bearers. The Clyman (domestic plum), a heavy bearer, ripens first and is good for nothing but shipping, and must be picked very green to be able to stand transportation. Next following is the Abundance plum (Japanese), which does well in some places and poorly in others.

The Tragedy prune (domestic) is very popular as a shipper, but is not rated as a good bearer. The Burbank plum (Japanese) is one of the best, being reasonably early, a rapid grower and a prolific bearer. It is becoming more and more popular with the consumer, and can be relied upon to stand transportation as well as any plum grown.

The Wickson plum (Japanese) resembles and has all the characteristics of the Burbank, but is somewhat later. The Yellow Egg, Gros Prune and Coe's Red, all domestic varieties, are still occasionally planted.

The French prune (Petit d'Agen) and the Robe de Sergeant are the varieties from which the dried prune of commerce is made. They thrive all over the coast, and by many it is thought that the present acreage is sufficient to supply all demands at anything like living prices for some time to come.

THE ALMOND.—The almond is particularly, in this country, a California product, this being the only State where it is grown. The places where it grows to perfection even here are but few. The location of the almond orchard must be as free as possible from killing frosts, and greater care must be taken to provide for the proper cross-pollination than probably any other fruit.

Much experimenting is going on with this kind of nut, and there are several new varieties of much promise, but not fully tested as yet in all particulars. The two most popular varieties, both with producer and consumer, at present are the Drake Seedling and the Non-pareil.

What I have said in regard to cross-pollination of the almond is true of many varieties of fruit, especially cherries, and many varieties of prunes and plums. Too little attention has been paid in the past to this matter, but its importance is now generally fully recognized. I would advise that no one plant the last-named in solid blocks of any one variety. Endeavor should be made to have mutually fertile varieties, which bloom at the same time, planted near together.

What varieties should be planted in proximity for this purpose cannot well be given, as different kinds blossom at different comparative times in the several districts, and some varieties partake so much of the nature of others as to be entirely useless for this purpose. Experiment and observation are the only recourse.

ADVICE.—In concluding, I will reiterate the advice given at the beginning of this article and say that the best way to avoid any serious mistakes is to avoid experimenting on a large scale, but to be guided by the knowledge and experience gained by those already engaged in the industry.

THE CO-OPERATOR.

Farmers' Mutual Insurance Companies.

The Farmers' Mutual Fire Insurance Association held its State convention in Los Angeles last week, at which an address on the subject of co-operation was made by Rev. C. C. Pierce.

A majority of the companies were represented, and delegates made encouraging reports of the business of their several companies. The following officers were elected for the ensuing year: President, F. E. Kellogg of Santa Barbara; vice-president, N. G. Nelson, Los Angeles; secretary and treasurer, G. C. Cromer, Los Angeles.

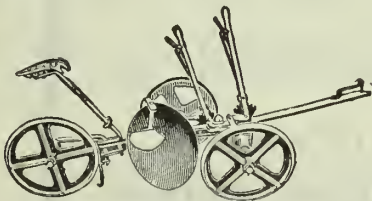
Many good ideas of co-operation were brought out by the question box, among other points being the fact that \$4,000,000 of insurance has been carried in these companies, at an annual cost of \$1 per thousand.

G. F. Cromer read a paper on "Needed Legislation," taking the position that while much was needed along that line, it was the duty of insurance people to avail themselves of the laws that exist.

F. E. Kellogg made an address on co-operation in general, touching on co-operative stores and factories and municipal and national ownership.

Strong resolutions were adopted favoring direct legislation in municipal, State and national affairs. The convention adjourned to meet in Fresno one year hence.

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The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JULY 8, 1902

- 704,289.—BELL—S. J. Asbell, Deerharbor, Wash.
- 704,433.—SASH FASTENER—A. Braner, Seattle, Wash.
- 704,172.—INSULATOR—J. E. Calvin, Camptonville, Cal.
- 704,173.—CAN BODY MACHINE—W. S. Case, Hayward, Cal.
- 703,995.—GAS GENERATOR—Caton & Warring, San Jose, Cal.
- 704,445.—ENDLESS CHAIN REEL—J. M. Dunahoo, Wood River, Cal.
- 704,015.—SEMAPHORE—W. D. Farren, Danville, Cal.
- 704,181.—BUILDING DAMS—A. D. Foote, Grass Valley, Cal.
- 704,031.—TREE SUPPORT—S. T. Hall, Riverside, Cal.
- 704,250.—WELL RIG—E. A. Hardison, Santa Paula, Cal.
- 704,189.—HAND STAMP—L. J. Hendershott, Spokane, Wash.
- 704,061.—HORSE HOLDING DEVICE—M. Lopsich, Sacramento, Cal.
- 704,062.—AMMONIA COMPRESSOR—J. T. Ludlow, S. F.
- 704,065.—WEIGHING APPARATUS—J. Manes, S. F.
- 704,085.—CAR AXLE BOX—O. Newhouse, S. F.
- 704,363.—SWITCH STAND—H. F. Ong, Wendling, Or.
- 704,316.—ACCOUNT BOOK—C. K. Rosenberg, S. F.
- 704,123.—LADDER—R. L. Scott, Arlington, Cal.
- 704,129.—DELIVERY APPARATUS—Sheedy & Campbell, Los Angeles, Cal.
- 704,130.—CIRCULATOR—Sheedy & Campbell, Los Angeles, Cal.
- 704,137.—SEWING MACHINE—D. M. Smythe, Pasadena, Cal.
- 704,280.—ROTARY ENGINE—A. T. Stimson, Eureka, Cal.
- 704,405.—WATER WHEEL—S. M. Thurman, Yuma, Ariz.

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Patent Agents, S. F., Cal., and Washington, D. C.

SQUIRRELS AT BONNIE BRAE.—Visalia Times: A. R. Carney of Bonnie Brae states that ground squirrels are very numerous in the orchards in that vicinity. In the early morning hours they are very active in stripping the orange trees of bark. The orchardists have resorted to wrapping the trunks and limbs of the trees with burlap, but it is not an uncommon thing for the squirrels to run up to a point above where the burlap ends and begin their destructive work. Poisoning has been resorted to in various ways. Poisoned wheat was first tried, but the squirrels did not take to it very well. Another plan was to poison oranges, which was more successful as a bait. The best plan, however, yet resorted to is the use of bisulphide of carbon, which is pumped into the holes by means of a machine. Mr. Carney was doubtful about the efficiency of that plan, as he could find no dead squirrels, but after trying it on a chicken he came to the conclusion that it was all right and that the squirrels die deep down in their holes. Those that do not die in their holes come to the surface in a groggy condition and are easily killed.

MALICIOUS KILLING OF EIGHT COWS.—Marysville Democrat: Last fall and winter three cows, the property of M. J. Wedderlein of the Jersey dairy, were killed by rifle ball. Last week—Thursday and Friday—three cows were killed, and last Sunday two more, all shot with large-sized bullets. The sheriff made an investigation and the matter of recent killing was kept from publication until now, but no clew has been found to warrant arrest. Wedderlein offers \$100 reward for information. The shooting was not accidental, but a clear case of wanton murder of the animals.

ONE WAY TO EXTERMINATE GOPHERS.—Pomona Times: E. T. Manchester of Pomona tells of a success made by himself and a neighbor in killing gophers. Mr. Manchester observed that this pest ate sweet potato vines with great avidity. He argued from this that the sweet potato vine is a favorite food of the

gopher, and that dipping it in a solution impregnated without the right amount of strychnine, placing it in the hole and covering it up, the gopher, with all his prudential wisdom, would eat of it and die. The experiment was carefully tried and great was the mortality among the gophers; in fact, in a short time three acres were completely rid of them, and also another tract.

FORGOT IT WAS DANGEROUS TO SHAKE A RED RAG AT A BULL.—Oakland Enquirer: Fred Nopel and Erwin Knowles had a narrow escape from death Thursday on the county road, while on a hunting trip. The young men, in a cart, started early into the foothills, and, while driving around a turn, were encountered by a bull, which blocked the road. Not thinking, Nopel waved a red cloth, trying to scare the bull away. The bull, however, became angered and made a blind dash at Nopel, who ran behind the cart. Knowles attempted to drive the cart forward and hit the bull with a whip, but this only served to arouse the animal's anger to a higher pitch, and he rushed at the cart and broke one wheel. With rare presence of mind, Nopel attracted the mad bull's attention from the cart by waving the red cloth again, and the bull made another charge at Nopel, who climbed over a fence. Knowles succeeded in getting the broken cart and frightened horse up the road and away from the bull, and in a short time they reached a farmhouse where the broken wheel was repaired.

HARVESTING THE ALFALFA.—Hanford Journal: L. P. Denney, who owns a large alfalfa ranch near Angiola, is in Hanford looking for harvest hands to get in his second crop of alfalfa. Despite the fact that the first crop this year was heavy, the second crop is immense, and the farmers down that way are highly pleased. As soon as the first crop was off the land was irrigated, and now a big second crop is ready to come in. This second crop is late, owing to the rather cool weather, no doubt, which has prevailed so far this summer.

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- VI. Introduction of Improved Fruit Varieties.
- VII. Clearing Land for Fruit.
- VIII. The Nursery.
- IX. Budding and Grafting.
- X. Preparation for Planting.
- XI. Planting Trees and Vines.
- XII. Pruning Orchard Trees and Thinning Fruit.
- XIII. Cultivation.
- XIV. Fertilizers for Fruit Trees and Vines.
- XV. Irrigation of Fruit Trees and Vines.
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- XVII. The Apricot.
- XVIII. The Cherry.
- XIX. The Peach.
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- XXVI. Grape Varieties in California.
- XXVII. The Date.
- XXVIII. The Fig.
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- XXX. The Orange.
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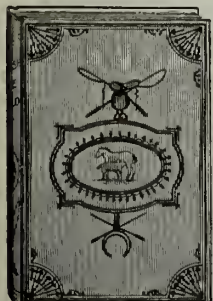
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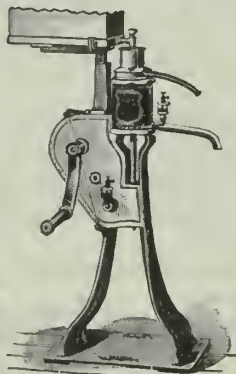
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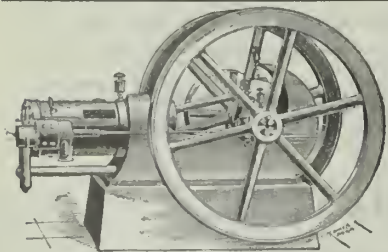
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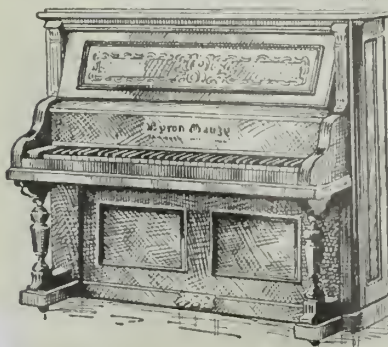
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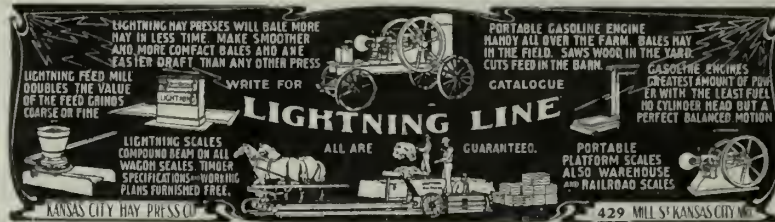
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 5.

SAN FRANCISCO, SATURDAY, AUGUST 2, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

On the Hardpan.

It is a good time of the year to find out by the aspect of a fruit tree what there is under it. If there is a shallow stratum of good soil beneath which lies bedrock or an impervious floor of impenetrable clay, the tree usually has by this time of the summer so fully exhausted the moisture supply that color and natural spread forsake the leaves and they become sere and limp and prematurely fall. The growth of fruit is arrested and the tints of maturity appear without the juiciness and tenderness which should keep pace with the heightening color. The tree is in distress. Later the new growth of wood may shrivel and next season there will be dieback and other indications of unthrift. Similar appearances may be noted upon trees which perhaps do not stand over hardpan, but have, perhaps, beneath them coarse sand or gravel through which their roots cannot extend to moisture below. Here, then, are two extremes of unsuitability in the subsoil for the satisfactory growth of fruit trees. Neither of them may be noticed early in the life of the tree if the moisture be neither too great nor

too little in the surface layer where the young tree is establishing itself; but as the tree attains size and bearing, and makes greater demand upon soil moisture than its defective situation can supply, some such manifestations as we have noted will be apparent.

Such things are not characteristic of any particular region of the State. They are wholly absent from large areas of valley soil, it is true, and yet here and there over the State such defective soils are likely to be encountered and they should always be looked for before investment in fruit planting. It is a fact that, if the irrigation, drainage and fertilizing are well looked to, there may be such an accurate adjustment of moisture and plant food that thrifty and profitable trees or vines can be secured and maintained, but the fruit will cost more and the plantation will be worth less than if deep free loam with good water retention and a full treasury of plant food had been selected as the foundation of the planting enterprise.

These are common facts, but we enumerate them because we are constantly reminded by the questions of new subscribers that they have not yet



An Almond Orchard on Hardpan Soil.



Behavior of Almond Roots on Hardpan.



Apricot Tree Ten Years Old on Hardpan.



Root System of Apricot on Hardpan.

learned to look beneath the surface of things, and because opportunity offers to present striking pictorial demonstration of the facts. The agricultural department of the State University has just issued a bulletin giving in detail the results of long experience in the growth of roots upon defective soils near Paso Robles, where a sub-station has been maintained for the last thirteen years, and growths are old enough to demonstrate their habits under prevailing conditions. In the bulletin to which we allude, which was carefully prepared by Mr. Charles H. Shinn after long observation, it is stated that by 1892 the fruit trees which had been planted over the hardpan had extended their roots to this barrier and spread out upon it, and the drouth of 1893 brought them into serious distress. The fruit was small and poor and lacked juice, and numbers of trees died. One picture shows the almond orchard in 1900. The largest tree was 16 feet high and 10 feet in spread of branches, with a trunk diameter of 10 inches (variety IXL, age twelve years). Another photograph shows the root system of one of the almonds, a twelve-year-old seedling, illustrating the extent to which even the almond was forced to grow on the surface. Yet, as the photograph shows, some roots in the center really succeeded in penetrating the hardpan.

Another pair of pictures shows the behavior of the apricot on hardpan. The variety is Smith's Triumph, ten

years planted, height 10 feet. This was the best apricot tree on this soil. During its entire life it has not yielded ten pounds of fruit. The root system of an adjoining tree of the same age and variety is also shown, and it illustrates the entire lack of penetrating power of the roots. The area of soil drawn upon by these apricot roots above the hardpan was less than 475 cubic feet. They seemed to lose their power of extension beyond 7 or 8 feet from base of the tree.

Of course these trees could have been helped by blasting the hardpan, for there was a free soil beneath, but the experiments tried at the station show that under certain conditions of drouth and lack of irrigation this recourse is of little moment. Mr. Shinn shows that aside from problems of climate, the granitic soil, on hardpan or otherwise, was soon exhausted and needed more moisture than the average rainfall to keep the trees in health. The hardpan soil was unfit for fruit culture. In order to remedy the difficulty as far as possible, holes were bored through the hardpan beneath selected trees. Close to other chosen trees holes were blasted. The extreme thickness of the hardpan militated against success in these efforts, and of fifty trees of all sorts of deciduous fruits thus treated none when removed several years later showed growth down these channels. The only plant which thrived in this orchard on hardpan soil and penetrated the hardpan was the Australian salt bush.

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E. J. WICKSON. Horticultural Editor

San Francisco, August 2, 1902.

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The Week.

Harvesting operations are at their height. There is the utmost bustle in all the fruit houses and cutting shacks, and the tented cities which have sprung up in our large orchards shelter many weary workers who have been doing their utmost to keep up their rapid work during the high heat, which has hurried on the fruit and at the same time given pickers, packers and cutters less nerve to keep pace with it. Fortunately, however, a little cooler air prevails, though the light showers at the extreme north and south of the State did not reach the great fruit districts, nor are they desired there. In the city the preparations for the August throng of Eastern visitors are well advanced, and there promises to be a multitude, indeed.

Wheat futures have taken a downward course and have affected the city spot prices somewhat, though speculative buying at interior points has been active. One ship has cleared for Europe and six have gone on the engaged list—four of them arriving under charters higher than the present rate here, and freights are said to be unsettled and weak. Two or three of the ships are chartered for South Africa with option to Europe. Barley is firm for export grades but weak for feed, though there is a good demand for the higher grades. Oats are weak and ordinary new oats are lower, especially when mixed with barley and wheat. Corn is dragging at old prices, but rye is firmly held in expectation of exports. There is little doing in white beans though they are firmly held, and in view of the Eastern crop outlook there is prospective improvement for white beans. The local trade favors colored kinds and pink beans are looking up. Bran is in light stock and high though the demand is not large. Hay is in free receipt, though less than formerly, is selling tolerably well and going into store for winter trade. Beef and mutton are unchanged, but hogs are active and firm at current rates. Butter apparently advanced too rapidly and has been dragging, but did not break, though weak at the advance. The same is the case with eggs. Cheese is steady. Poultry has gone poorly. Though potato receipts have been light sales have been slow and weak. Onions are hardly steady though the demand is good; offerings are heavier, but some relief may come from Australian shipments. Fresh fruits are in large supply and canners are buying considerably of the higher grades, but defective lots are suffering. There is a free movement and good demand for dried apricots for immediate delivery, though prices are not high.

Dried peaches have done little yet. Prunes are wanted badly, but buyers are slow to meet growers' views and talk of holding off to clear the situation. Bids up to 2.4 cents for Colusa prunes have been rejected. New raisins are being held above buyers views. Citrus fruits are going slowly at old prices. Honey is firm and higher for comb. Hops are still booming and a bid of 23 cents for Sonoma said to be rejected. Wool is well cleaned up and firm.

The death is announced of L. C. Tibbits, who received from the United States Department of Agriculture the two orange trees from which our large plantings of Washington Navel oranges sprang. There is a good deal said about Mr. Tibbits being maintained at county expense during his later years of misfortune as indicating ingratitude on the part of the orange growers. We understand in the first place from Riverside that the numerous reports of Mr. Tibbits' destitution which have been widely circulated were not founded on facts. We are assured that during his stay at the hospital he has been supplied with the comforts of life, and was entirely contented. The public should know this and not be moved by the sensational reports which are current. Besides, Mr. Tibbits handled the trees which the Government gave him on a strictly business basis and sold the buds at the good round rates which were easily commanded. By thus doing, he made no sacrifice nor did he render any conspicuous public service. It is gratifying, however, to be assured that one of the parent Navel orange trees which Mr. Tibbits budded has recently been removed to the head of Magnolia avenue in Riverside, and it is probable that a suitable tablet will be erected there to his memory.

Efforts to establish a strong nucleus at San Jose for a future general organization of prune growers are progressing favorably at San Jose. The Mercury says that the sale of the big warehouse at Santa Clara, belonging to the Cured Fruit Association, has been postponed one week in the hope that there will then be perfected the project to form a corporation of local growers with sufficient capital to acquire the property for what it is really worth. Meetings are being frequently held and on July 26th the effort to warrant the issuance of a circular of appeal to prune people to form a new organization as a corporation under the laws of the State of California, as soon as practicable, in order that the packing house at Santa Clara and other available property of said Association, now offered for sale, may be purchased and utilized by such new corporation in carrying out its purposes. The new corporation, to be known as the Cured Fruit Association of California, in contradistinction to the title of the present organization, the California Cured Fruit Association, seems likely to realize the hopes of its promoters. An appeal is made to all fruit growers who desire the advantageous features of the old Association continued and its real objects and purposes promoted and accomplished, to actively assist in the formation of the new corporation. We trust this may be done. This so desirable general Association should not be indefinitely postponed by negligence just at this important moment.

Wisconsin and California are drawing very close together on lines of agricultural education. Prof. W. A. Henry, the eminent head of the agricultural department of the University of Wisconsin, is now leading a class at the summer school of the University of California at Berkeley, and is thus localizing his potent influence in making the feeding of domestic animals more rational and more profitable. There is also present at Berkeley this week Dr. Babcock, the distinguished dairy chemist of the Wisconsin University, who has done such well-known and world-wide service by his investigations and inventions. Profs. Henry and Babcock are too earnest and active men to forget their great mission even during a time of partial recreation in this distant part of the country, but are doing everything in their power to promote sound doctrine on the subject of better provision everywhere for popular education in agricultural practice, or in other words, better technical education in agriculture. They know what this is accomplishing at the East, and they know also that the development and prosperity of California will be promoted incalculably by affording oppor-

tunity for teaching young people how to do all sorts of agricultural aright. They see that agricultural science is advancing rapidly but the effort to instill better methods of work, which can alone be done by adequate means for practical education, is not adequately provided for. Their earnest words and their cogent facts in this direction cannot fail to accomplish much. We are rich in having them with us in conference with our educators and much good will come of it.

But the sheep men are not to be allowed the victory they gained in the decision by Judge Heacock that it was unconstitutional for the Secretary of the Treasury to issue an order prohibiting the pasturing of sheep within the confines of the forest reserve. Sheep men, accused of violating the order, were arrested but discharged by United States Commissioner Heacock on the ground that Congress cannot delegate its law-making power to any department and consequently the Secretary of the Treasury can not make laws on the subject of sheep pasturing. For this reason the actions against the sheep owners failed. But United States Attorney Woodworth brought an action recently in the Circuit Court in behalf of the Government of the United States asking for an injunction restraining the sheep men from pasturing sheep on the Stanislaus forest reserve, located in Tuolumne, Alpine, Calaveras and El Dorado counties. Judge Beatty issued a temporary restraining order.

QUERIES AND REPLIES.

Cracked and Deformed Melons.

TO THE EDITOR:—I send samples of cantaloupes. From some unknown cause, one-half to two-thirds of the melons in the patch split open, after the manner of the samples. They are grown on non-irrigated ground, and I would like to know if you can explain the cause of the cracking.—C. C. ROYCE, Chico.

The injury which resulted in this malformation must have been accomplished very early in the career of the melon, and it consisted in some injury to the epidermis, which stopped its capacity for growth and expansion. The result was, as the growth pressure increased in the fruit, that the surface parted at this weak point and the new tissue grew around it, more slowly, however, than the tissue expanded in other parts of the fruit. The result is: the opposite side of the melon normal, the diseased side abnormal, having a thin deposit of tissue, and, consequently, the seeds, which should be central, are off at one side. It will require study of melons soon after they set upon the vines to determine the cause of this trouble. It might be that the little melon at that time was in immediate contact with wet ground, which induced superficial decay or rotting, and this would be the seat of just such injury as that we have described. In that case, one would expect to find the injury on the under sides of the melon, as it seems to be from the look of these specimens. But quite the same result to the melon might be accomplished by a touch of sunburn on the upper surface, if the heat should come on suddenly early in the summer, when the tissues were very tender. In that case the crack would be at the sunburned spot and the normal enlargement would be below. Similar arrest of the superficial growth might be accomplished by a mechanical injury of some kind. It matters not what the cause. The cracking due to vegetative pressure in the fruit and the subsequent overcrowding will follow any sort of superficial injury which destroys the expansiveness of the skin. This being the case, it does not appear that any treatment, as if for a disease of the vine, would be called for, but rather that such melons that thus go to the bad should be picked off as soon as seen. It would be an economic question as to whether it would be worth what it would cost to go over the plantation and remove such melons in order that the vine might send its vegetative energy into perfect specimens. Such would be the theoretical prescription, but it might cost more than it would be worth.

Bearing of Loganberries.

TO THE EDITOR:—Do Logan berries bear a late crop after the first crop is gone?—BEGINNER, Atlas.

Not usually. The new canes which are growing while the fruit is ripening, and later, matures during

the autumn, send out the fruiting laterals the following spring and ripen the fruit. This is the ordinary course of the plant in the bay district, at least. It does not show the disposition of the raspberry to fruit in the autumn, though we doubt not double fruiting can be induced by forcing the new canes to maturity by drying out and then start growth by fall irrigation, where high autumn temperatures can be counted upon. Possibly the plant takes this course on its own account in some parts of the State, but we have not observed it.

The Triumph Peach.

TO THE EDITOR:—Since returning from southern California, and comparing the new peach with a variety known as Triumph growing on my place, I have come to the conclusion that the supposed new peach and the Triumph are one and the same thing, so that under the circumstances the claim which I made as to having originated a new peach must be withdrawn. I beg to state that the Triumph is undoubtedly a valuable variety in the line of early peaches, in its size, general form, and the fact that its flesh is clear yellow to the pit will, in my opinion, make it a very valuable acquisition among the line of early peaches for shipping and canning purposes. It is, however, not a true clingstone in the true sense of the word, for after the peaches become thoroughly ripened up the flesh softens more than any clingstone varieties, and the pit comes out more readily than in a cling; but I do not think that this detracts in any way from its value.

I thank you for the favorable comments you made on the peach; but as I do not wish to make any claims for originating a new variety of fruit where I have not done so, I desire to make this explanation.—GEO. C. ROEDING, Fresno.

As we had never seen the Triumph peach we readily fell into our share of the error. This experience should teach all of us that we should very seldom claim a thing as a new variety unless we have evidence that can not be questioned that it came from a pit or a well-authenticated case of bud variation. There should be positive evidence of its beginning. It will not do to conclude a thing new because its origin is to us unknown. In our own practice we understand, when a specimen is submitted to us as new, that the sender knows of its point of origin, and we comment upon it from that point of view, unless we have strong reason to suspect its identity with some already known variety. In this case no harm is done. If the peach is the Triumph, wider attention will be called to it, and it seems to have clear points of merit.

Shrunken Apples—Salt for Asparagus.

TO THE EDITOR:—Why do I find such a lot of shriveled-up apples, as per sample, on some of my trees, especially of this particular kind of apple, which is called Smith's Cider, and is there a remedy for it? Is it practicable to irrigate a newly planted asparagus bed with salt water, as I live right near the bay? If not, could you give me an idea of about how much salt to give to each asparagus plant, as I understand they require some?—A SUBSCRIBER, San Rafael.

The growth of the apples has been checked by some agency of which no clew appears upon the fruit or twig. There is a little leaf spot fungus and some leaf aphid, but too little to have thus affected the fruit. We can only guess that low temperatures at the time of setting may have had something to do with it. Many specimens are defective through lack of pollination, but not all.

There is no need to apply salt to a lot of new plants of asparagus, though bay water could be used to a limited extent if it is handy. Land near the bay usually contains all the salt a young plant needs, though some bay water may be used after the roots have been cropped a few years. We would not think for a moment of applying salt to the plants for a few years to come.

Manure for Strawberries.

TO THE EDITOR:—Is there any difference in the use of horse manure or cow manure on strawberry plants? The PACIFIC RURAL PRESS has cautioned several times against the use of barnyard manure.—L. D. S., Napa.

The chief danger in barnyard manure lies in overstimulation of leaf growth, which is somewhat at enmity to free fruiting. And yet either horse or cow manure applied in moderate quantity when the ground is cleaned up in the fall, and about the time the rains come, to leach the soluble matter into the soil, is often a very good tonic for the berry plants. The balance of the manure plowed in later adds to

the friability and moisture retention of the soil. Either horse or cow manure will do for this, but not in excess, and only in the fall or early winter. Coarse manure plowed in too late in the season is apt to hurt the plants by making the soil too open and liable to dry out too freely.

Bitterness in Cucumbers.

TO THE EDITOR:—Why are some cucumbers very bitter and others are not? Last year I discovered that all the bitter cucumbers were the product of one particular vine and that there were no bitter ones on several other vines.—AMATEUR.

Bitterness is believed to be promoted by slow growth caused by lack of proper amount of moisture. Bitterness in a single vine is, however, the outcropping of cussedness in that vine and it should be destroyed lest the seed be saved to grow other bitter vines. If we had more careful selection of cucumbers by taste and the saving of the best, instead of the latest and worst, for seed bearing, we would have fewer bitter ones.

Smut and Scales.

TO THE EDITOR:—I send some orange leaves covered somewhat with a black, sticky substance, and also some insects that look like scale. I wish to know what they are and also the remedy.—B. H. BRUBAKER, Corning.

The black substance is a fungus generally called smut and it is growing on the honey dew exuded by the "soft orange scale" (*Lecanium hesperidum*) which infests the trees. Kill the scales by thorough spraying with kerosene emulsion and there will be no honey dew for the smut fungus to flourish upon.

Too Many Bad, Brown Birds.

TO THE EDITOR:—Is there any protection against the swarms of brown birds that trouble us in the fall? Our mountain farm is very sheltered and we have late fruit and vegetables until Thanksgiving and after. Our late raspberries would be very profitable during November and sometimes into December, but just as the berries are ready to pick the brown birds appear and do it for us. Can we poison them, and how? So far we have never had any success in ridding ourselves of them in the spring. They eat off the young peas and other tender vegetables as soon as they are out of the ground. Their depredations are worse near the thick hedge that is at the bottom of the garden, where they seek refuge at all signs of danger.—SUBSCRIBER, Napa.

Such bad birds may be poisoned. Put up shallow pans on posts and keep water in them until the birds get used to them as drinking places, and then fill them with water in which strychnine has been dissolved at the rate of one-eighth of an ounce to three gallons of water. They will be poisoned in large numbers. Or halve a ripe apple or orange, smear the cut surface with powdered strychnine and put the halves on the upper ends of sharpened stakes. This bait will also take many birds. We have found a colony of cats very effective against sparrows.

Cheap Pork—Cow Fattening.

TO THE EDITOR:—What part of the coast would you commend for raising swine—that is, where do you think hogs can be raised the cheapest? I have a cow I wish to fatten and have plenty of barley hay. What else should I feed?—HARRY O. MOORE, Los Gatos.

If you have no waste products, like buttermilk and skim milk, to be profitably disposed of, the cheapest place to make pork is where you can get the best growth of alfalfa and barley or kafir corn. This is in the irrigated districts of the interior valley of California.

For quick fattening of your cow use barley hay for roughage and feed middlings or corn meal. The high price of corn meal in California is unfortunately against its use. A few beets or squash or a little clover hay will be good for variety and to keep the system in good order. If you can get good burr clover dry feed pasturage, your cow will fatten quickly and you can save most of the hay and other feeds.

Winter Legume for Soil Fixing.

TO THE EDITOR:—I desire to sow something on my fields this fall that would be a winter growing plant to protect the soil in case of overflow; my soil is rich sediment on the river. This plant should be something that would enrich the soil when plowed under in the spring. Does winter vetch succeed in this part of California and on such soil?—TENDERFOOT, St. Helena.

To get the best results in plowing under as well as

in soil fixing a legume is demanded. Burr clover started with first rains should serve a good purpose. Winter vetches are being favorably reported and are worth local trials in all such places.

Shothole Fungus.

TO THE EDITOR:—Enclosed find an apricot infected with some disease. Please tell me what it is, and the remedy.—A. J. M., Fairfield.

The disease is shothole fungus. The remedy is, first, a thorough spraying with winter Bordeaux mixture before the blossom buds swell, and summer Bordeaux after the fruit has set, but before it attacked by the fungus. In this way clean fruit can be had.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 28, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Extremely hot weather prevailed in all sections from the 22d to 24th, the maximum temperature on the latter date having been 108° at Sacramento, 116° at Red Bluff, and 115° at Guinda. It is probable that deciduous fruits and early grapes were damaged by the heat. Red spiders are damaging prune trees in Yolo county. Grapes are said to be about three weeks later than usual. Oranges and olives are in good condition. Grain harvesting and thrashing continue. There is an excellent yield of wheat, barley and oats in nearly all sections. Hay baling is progressing. Disastrous fires have occurred in many places, causing considerable loss on grain, feed, timber and buildings.

COAST AND BAY SECTIONS.

High temperatures have prevailed in all sections during the week, though moderated somewhat by fogs and cooling breezes in the immediate coast and bay districts. The extreme heat in the interior has been unfavorable for fruit, hops, beans and vegetables, and some damage has probably occurred. Grapes have not been injured, and are in excellent condition. Light rain fell in some places on the 26th, and was beneficial to most crops. Fires have damaged feed, grain, and timber lands. Grain harvest is progressing rapidly. There is an excellent crop in the central and northern districts, and the yield in the south is better than anticipated.

SAN JOAQUIN VALLEY.

The weather during the week has been the hottest of the season, but so far as can be learned not injurious to crops. The high temperature has caused a rapid ripening of deciduous fruits and benefited grapes. Light sprinkles of rain have fallen in some sections. Nearly all deciduous fruits are in excellent condition and yielding good crops. Grapes continue thrifty, and a heavy yield is probable. Vineyards have not been badly damaged by grasshoppers. Grain harvest and thrashing are in progress, and good crops are the rule except in the south. Sweet potatoes and corn are making good growth.

SOUTHERN CALIFORNIA.

The weather during the week has been oppressively hot, with considerable cloudiness and fogs along the coast. Heavy rain fell in San Diego and vicinity on the 25th, varying from 1 inch on the lower lands to over 2 inches in the mountain districts, and was of great benefit to orchards and vineyards; baled hay was slightly damaged, but grain in sacks was protected. Apricot drying is progressing. Other deciduous fruits are doing well. Walnuts are in better condition than at the last report. Vineyards are thrifty, and give promise of a heavy crop. Citrus fruits are in good condition.

EUREKA SUMMARY.—The condition of fruit is exceedingly good, except in northern Humboldt county, where many orchards were destroyed by San Jose scale and codlin moth. In most sections hay is about all harvested.

LOS ANGELES SUMMARY.—Cool week, with considerable cloudiness and rain in the southern sections. Apricot drying is almost over, and in places there was much lost from lack of help. Peaches promise well, but fruit is generally small.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 30, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	.01	.23	.01	.09	64	52
Red Bluff.....	.00	.10	.00	.03	116	62
Sacramento.....	.00	.00	.00	.02	108	54
San Francisco.....	T	T	.00	.02	72	52
Fresno.....	.00	.00	.00	.01	110	62
Independence.....	.16	.16	.10	.02	100	64
San Luis Obispo.....	T	T	T	.01	86	48
Los Angeles.....	.00	T	T	.02	86	60
San Diego.....	.86	.90	T	.01	76	62
Yuma.....	.01	.11	T	.18	112	70

THE DAIRY.

The Dairy Shorthorns.

TO THE EDITOR:—You invite discussion, at the conclusion of Mr. Walter Gammon's paper on "Are We Making a Mistake in Neglecting the Holstein Cow?" in the PACIFIC RURAL PRESS of the issues of May 24 and 31 and June 7. As no one appears to have taken up the subject of defending a breed of cattle which he fain would consign to oblivion, as far as usefulness in the dairy is concerned, I wish to briefly state wherein I differ from him on some points regarding the Shorthorn as a dairy cow. I will first say, however, that I agree in the main with what he says in his papers, especially with that part which condemns cross and mixed breeding—a course pursued by too many farmers and dairymen, and which results only in deterioration of those parts and qualities which are practically the making of a good herd of cattle. The points on which I differ with Mr. Gammon are found in the following paragraph:

In the Shorthorn we find that, when by the selection of a few choice animals as a nucleus for a dairy out of a large herd or number of different herds (which it is quite likely one will be obliged to visit before he finds what he wants), it is next to impossible to get a heifer from any of these selected cows that will ever prove nearly as desirable an animal as her dam. In a large number of cases it seems to be the result of experience only that we can secure one heifer out of five that will ever develop into a superior cow. If that be the case, does it not prove that one must needs handle a large number to ever get together a good herd? In fact, we believe this defect alone in the Shorthorn, if one should confine himself to his own herd, so far as cows are concerned, absolutely prohibits him from ever having a desirable herd of dairy animals. One can obtain such a herd of Shorthorns, providing he lives long enough and will go into other herds and make liberal purchases, but he can never maintain it with any regularity. We have yet to see a herd of thoroughbred or pure-bred Shorthorns that makes a creditable showing when we apply the dairy qualifications to each and every animal. Is it to be expected that any of us taken at random can in a short lifetime do what others have failed to accomplish after persistent efforts for ages? These defects just mentioned, be it remembered, refer solely to pure-bred animals, for we are dealing solely with that class.

PROPER SOURCE OF DAIRY SHORTHORNS.—If a man wants to buy animals with which to form the nucleus of a herd of dairy Shorthorns, he must go into herds that have been continuously used as dairy cattle, where the cows are milked and the calves reared by hand, for I repeat what I have often said through the columns of the PACIFIC RURAL PRESS, that cows which are allowed to suckle their calves cannot be depended upon as being either suitable for or profitable in the dairy, neither in themselves nor their produce.

Mr. Gammon says, "We have yet to see a herd of pure-bred Shorthorns that makes a creditable showing when we apply the dairy qualifications to each and every animal," to which I would answer that there are such herds in existence, though I do not know of any in this State that have been trained up and used in such a manner for a sufficient length of time to make them reliable as producers of animals that are good milkers, and I can claim acquaintance with nearly, if not quite, all the Shorthorn breeders in this State and their cattle.

DAIRY SHORTHORNS NOT TO BE FOUND IN BEEF HERDS.—Mr. Gammon's experience evidently has not been with dairy Shorthorns, but rather, I should judge, with those of the beefy class, whose ancestors have not been used for even one man's short lifetime as dairy cows. One might about as well expect to select good dairy cows from among Hereford or Polled Angus cattle as to expect to get them from Shorthorns that have for generations been bred and fed for the production of beef and the show ring.

SELECTION.—Now I admit that to fully establish a herd that can be depended on for the tolerably regular production of good dairy cows, it is necessary to handle a large number of cattle in order to accomplish that which is a life's work in itself, for by what means have all the best herds of cattle of any breed and for whatever purpose been established but by a continuous selection of the best, and nothing but the best. The Holsteins are not all good dairy cows, neither are the Jerseys nor the Guernseys and the Ayrshires. Though the two latter are not mentioned by Mr. Gammon, they are two excellent breeds of dairy cattle, and I sometimes think them to be as profitable a sort in the dairy as the Holsteins.

AN APPEAL TO EXPERIENCE.—Mr. Gammon seems to think that the only way to get together a desirable herd of dairy animals of the Shorthorn breed is by making liberal purchases from other herds, and thus only it might be possible to get together such a herd, providing a man lived long enough. It is now thirty-five years since I began to get together a herd of dairy Shorthorns. Every animal in a herd of seventy head, except one, was bred by myself; they are all descended from five cows that I bought, the last cow bought coming into the herd about thirteen years ago. There are about thirty head of breeding cows, besides some heifers that are old enough to be bred, representing five different families, and there

is not a poor milker among them all that have had calves. All cows that have had their second calf have given forty to forty-six pounds of milk a day, several of the older cows have given over fifty pounds a day, some others fifty-five to sixty pounds a day, and one cow for a period of about two months after calving, on the 22nd of March, gave sixty-four to sixty-six pounds of milk a day.

During the month of May twenty-six cows were milking and in June twenty-five, six of which were heifers with first calf. During these two months there was marketed as the produce of the above cows 1451 pounds of butter, to which must be added the milk, butter and cream used at home to get at the total produce, there being also one or two calves getting new milk during that time.

The above were not by any means a lot of fresh cows that had all calved in the spring, or say after January 1, 1902. Their dates of calving were as follows: Two calved in August, two in October, five in November and seven in December, 1901; then three in January, three in March, two in April and one in May, 1902. Two of the cows milking in June were turned out dry, being due to calve again soon. I think the above a fairly good yield of butter from that number of cows, considering their time of calving and the dryness of the feed, the grass being quite dry before the first of June. While the above may not be considered a great yield, I will ask Mr. Gammon if he can give me an instance of something better from a herd of Holsteins of equal size, all having been bred by their present owner and kept on dry feed during the same time or thereabouts.

SHORTHORN HISTORY.—In conclusion, I will say that Mr. Gammon evidently is not acquainted with Shorthorn history, else he would not have made such a sweeping statement as the following: "Is it to be expected that any of us taken at random can in a short lifetime do what others have failed to accomplish after persistent efforts for ages?"

Had Mr. Gammon known anything of Shorthorns in their native land he would never have made use of such a statement. Does he not know that cows of the Shorthorn breed have taken more premiums, by actual test, at the London Dairy Show than cows of all other breeds put together? Then, in old times, where were the herds of Thomas Bates and Sir Charles Knightley, besides others too numerous to mention, all of whose herds were celebrated for their superior dairy qualities—qualities which are still maintained and reproduced with great regularity in cattle descended from their herds, even to this day?

ROBERT ASHBURNER.

Lakeville, Sonoma Co., Cal., July 23, 1902.

Profits in the Dairy Business.

A. B. Evans of the San Joaquin Ice & Creamery Co. has obtained some very interesting information from those who deliver milk to his company:

G. S. Hewitt of Fresno reports that he has milked an average of forty-three cows during the past year, from which he has received in butter fat at the rate of \$55.93 per cow. He has raised and sold calves and hogs fed on skimmed milk at the rate of \$19.70 per cow, which would net him \$75.64 per cow for the year.

A. B. Evans milked on the average thirty cows and received for butter fat \$55.98 for the year. He sold calves and hogs raised on skimmed milk to the amount of \$13.12 per cow, and he has fourteen head of calves, valued at \$250. All his cattle are kept on a tract comprising eighty acres of alfalfa.

J. S. Taylor of Selma milked an average of forty cows, which brought him \$56.63 per head for butter fat. Hogs and calves which he raised on skimmed milk brought his earnings up to \$76.63 per cow for the year. He uses sixty acres of alfalfa for the herd.

S. M. Gilliam of Visalia milked an average of thirty-five cows, which returned him in butter fat \$56.12, which with the feed value of skimmed milk, say \$20 per cow—which is much lower than the one given by Mr. Gilliam—will make his average income per cow \$76.12.

THE IRRIGATOR.

The Amount of Water Used in Irrigation.

The office of experiment stations, United States Department of Agriculture, has just issued an interesting and valuable report of its irrigation investigations for 1901. It is handsomely illustrated by twenty-five plates and twenty-nine text figures. In it are given the results of the year's measurements and studies of a large number of leading irrigation experts of the arid region, acting under the direction of Elwood Mead, chief of irrigation investigations, among whom are: A. F. Doremus, State Engineer of Utah; D. W. Ross, State Engineer of Idaho; Prof. O. V. P. Stout of the University of Nebraska; Prof. J. M. Wilson of the University of California; Prof. O. L. Waller of Washington; Prof. Samuel Fortier of Montana; Prof. J. C. Nagle of College Station, Texas, and W. H. Code of Arizona, recently appointed inspector of irrigation surveys in the Interior Department, all of whom are resident

agents of these investigations in their respective States.

Prof. Mead, in his introduction, speaks of the nature of the work being carried on and the importance of a general knowledge on this subject, for which purpose the bulletin has been written. He speaks of the growing demand for the construction of irrigation works by Government aid, and that prior to such construction the Government authorities should know how much land can be reclaimed by each proposed enterprise, and that precautions should be taken along this line to prevent mistakes which might seriously retard the development of the West for many years. This is followed by the discussion of the experts above mentioned.

All have made a careful and painstaking investigation, and, although they deal with phases of irrigation typical of their own State, the conclusions of all are exceedingly interesting and will be carefully studied by Western farmers and all interested in the development to be inaugurated under national aid.

Mr. D. W. Ross, State Engineer of Idaho, calls attention to the increased duty of water, which is being brought about by a modification of water right contracts. Mr. Ross has given considerable attention to this reform, and, owing to his efforts and others connected with this investigation, canal companies are substituting contracts in which the water is measured to the farmer and he pays only for what he uses, in place of the earlier contracts, where he was charged for the acres irrigated. In this way the farmer is led to economize, because he gets the benefit of his savings. Changes of this kind have increased the need for more accurate methods of measuring water, hence the designing of cheap, efficient water registers has been given much attention by this branch of the department, and a number of new patterns have been invented and are now being furnished to irrigators by some of the leading instrument makers of the country at very reasonable prices.

The duty of water is the leading subject dealt with in all the reports, although each paper discusses the local practice of the region where the measurements were made. These are reviewed in the discussion of the amount of water needed to irrigate an acre of land by Clarence T. Johnston, assistant chief of the investigations. It shows that the average depth of water being applied to irrigate fields is more than 4 feet, being 4.35 feet in 1899, 4.15 feet in 1900, and 4.60 feet in 1901. Measurements like these are necessary in order to determine how much land can be irrigated from the reservoirs which the Government is to build, and also what will be the value of the water stored in them. Without this information serious errors might be made, as they have been made in the past, either because of allowing more water than was needed or in attempting to irrigate too many acres.

The report is in four parts, any of which can be had by applying to the director of the office of experiment stations, United States Department of Agriculture, at Washington.

THE POULTRY YARD.

Poultry Houses.

The Petaluma Poultry Keepers' Association had a very interesting meeting last week. One of the topics considered was poultry houses, and Mr. Frank Snow in his local poultry journal gives a good account of the discussion. There was read a paper by Geo. J. Armstrong in response to questions as to his preference in regard to poultry houses, as follows:

In regard to housing poultry, the main feature is something that will fill the bill and still be cheap, where we make the production of eggs alone a specialty. The best and cheapest house I can build is a house 9x16, 4-foot walls, gable roof covered with shakes, sides of 1/2-inch lumber, built on runners to move. This is light and at the same time strong and cheap. I have the door in the center of one end and run the roosts lengthwise of the house, three roosts the whole length of the house, and makes it convenient to clean without moving the roosts. It is also convenient to catch any hen you want without disturbing the rest. I put a bracelet bracket under the roosts in the center so they would not sag down.

This is a house without a floor. Now for a floored house I should put the sides 5 feet 4 inches. Cut a 16-foot board in three so you can stand erect without bumping your head. I think the floored house the best on account of cleaning. The movable house is good where you have lots of room, but I don't think moving houses and plowing is as good as cleaning out and hauling the manure off the ground the hens run on. I find from experience that unless you haul off the manure the ground becomes foul and the first wet season we get we have trouble.

I think the colony plan the best for economy and convenience, for you can make one feed house and one laying house do for about three hen houses. It makes less places to feed and water and to look after setting hens.

OTHER DETAILS.—I like a house on the above plan quilt tight on both sides and one end. The door end

THE APIARY.

How to Make Bees Pay in a Good Locality.

By EDGAR L. DAVIS of Linden, San Joaquin County, and Furnished for Publication in the PACIFIC RURAL PRESS.

The purpose of this article is to give those interested in the subject practical information that will assist them in bee culture. I have studied the subject closely and have sought information from all sources possible. Had I possessed at the beginning of my work the information which I will here give to the novice, it would have been worth a great deal to me.

CHOICE OF BEES.—Of the two kinds of bees most common in this locality—the Blacks and the Italian—the advantage is all in favor of the Italian.

The Blacks are small and are originally from Germany, if I have been correctly informed. They are very restless on the comb when the lid is raised and are inclined to come to the top of the frames to see what is taking place. They store honey and are cheap, if you want to buy them.

The Italians are a large bee with yellow bands. If the lid is lifted from the hive, you will notice their quietness when you take out a frame; still, they seem to be undisturbed, their work being carried on almost the same as when the hive is closed. I have seen them disappear to a bee from the top of the frames when the lid was lifted. One can handle them with little danger of being stung, even without veil or gloves. They are the greatest known honey gatherers. Moths will not bother them. They are the highest-priced bees, but in the end the cheapest. But I will advise you to start with Blacks, and with one colony, as they can be bought all the way from 50 cents to \$1 a colony, and you will gain profitable experience, which you will not likely get if you start with Italians.

ITALIANIZING.—In one season the blacks can be Italianized, but it is better to take two seasons. Suppose you have purchased a colony of Black bees in an old box hive. It will now be necessary for you to move them. The fore part of the month of February in this locality is probably the best time, as the weather is cool and there are less brood and honey. Care must be taken not to destroy the queen, for at this time she can not be replaced. After you have provided yourself with a strip of screen, a slat of the same length as the screen, a hammer, nails, gloves, veil and a smoker, approach the hive with the smoker in hand from the rear, or from any side except that on which is the bee entrance, give them a puff or two of smoke at the entrance and proceed to nail up the hive. Close the entrance at last with the screen and slat, giving them as much ventilation as possible. This ventilation will be sufficient if you wish to move them a short distance. For a long distance I would advise the use of a screen in place of the lid of the hive. The hive may be nailed up any time during the day, but the entrance should not be closed until about sunset, or after the bees have quit flying.

When the hive is closed, place it on your vehicle—one with springs is preferable—in such a position that the combs will be crossways on the rig, as in that way they are less liable to break. When you have taken them home and placed them on the stand which you wish them to occupy, give them a puff or two of smoke and then remove the slat or screen from the entrance. The stand on which the hive is placed should be raised from the ground 4 or 5 inches, as at that height the bees on the alighting board are out of sight of frogs, which prey on bees as they do on flies.

They may now be left until the following day. The middle of the day is best, as they are easiest handled when it is warm. Then it would be well to examine the combs to see that they have not been broken while being moved.

TRANSFERRING.—It will now be necessary for you to transfer the comb and bees from your old box hive to a good hive. The one that is most extensively used is the Langstroth, with the self-spacing Hoffman frames. You will make no mistake if you use this hive—the eight-frame for comb honey and the ten-frame for extracted honey. These frames when placed together in the hive have the standard space, 1½ inches from center to center. It will be better to work for comb honey until you have increased your colonies, so that they will pay for the necessary apparatus used in extracting.

Place the hive where you wish to do the transferring. Now provide yourself with a hammer, cold chisel and a sharp, long-bladed knife, proceed to the hive which contains the bees, smoke them, and with the cold chisel cut open, if the combs are not movable, the side of the hive from which you can best get at them. Cut the combs out, first smoking the bees from them, and fit the best and straightest ones in your frames, tying a string around each just below the top bar. When you have transferred about one-half of the combs, place your new hive containing the frames which you have transferred, in the place of the old one, and drive the bees into it with your smoker; then you may heat the remaining good combs, the same as you did the first ones. If there are any frames that have not been filled with the

combs, fill them with foundation and place them in the hive with the others. In about two days these combs will be securely fastened to the frames. The remaining pieces of comb that have brood in them may be placed to hatch in a super over the brood next, on top of which has been placed a honey board. The queen can not get through this perforated zinc to lay eggs where the bees have hatched, so the comb may be removed after the hatching without destroying eggs.

Now you have your bees in good shape for observation. Remove the lid, take out a frame and notice the wonderful construction of the comb.

STUDYING THE BEES.—Take a frame in which has been no comb or foundation—one in which comb has just been started—and you will find in two or three places heart-shaped cones, tapering to an edge all around. These are drawn out and united to form one comb. The base of the cells on one side forms the base of those on the opposite side, and each side of a cell forms a side of another cell.

Wax is removed from the telescope part of the bees, where it is formed, and is used by the bees' mandibles in the building of comb. While you are looking over the combs, two sizes of cells may be noticed. After eggs have been laid in them, the smaller cells hatch the worker bees, which are undeveloped females or neuters, and, from the larger-size cells, the males or drones. The queens may be raised from any worker eggs by the feeding of "royal jelly," which the bees prepare especially for the purpose.

Three days after the eggs are laid they are hatched into larvae and in ten days they are sealed up. The workers are hatched in about twenty-one days. Watch the little fellow after he has gnawed through the caps of his cells with his mandibles and began running over the combs looking for work. They do not have to be told what to do or how to do it, but go right to work, like they had always done it, preparing food for and feeding larvae, and the queen building queen cells and feeding the larvae in them which produce queens, building comb, distributing honey which they receive from the honey gatherers, pressing pollen in the cells which the old bees have brought in the baskets of their hind legs, varnishing the hive inside and filling up all crevices with propolis. The lid is often fastened with this bee glue, so that in cold weather it is difficult to raise it without the use of a pry.

Watch the guards—but not from the entrance side, or you may receive a pointed reminder that this is not the best place for you. Stand to one side, in a position where they may be seen. Robber bees may be seen trying to gain an entrance to the hive. How quickly the guards, by their keen sight and sense of smell, recognize the intruders, attack them and sting them to death!

Bees may be seen at the entrance with their wings in motion, causing a circulation of air, which promotes the evaporation of the honey. Only a few of these can be seen from the outside, as most of the work is carried on inside. The inside work seemingly never ceases day and night during the honey flow.

When the bees are about ten days old they go out and try their wings. Soon they are in search of honey or nectar, as it is in the blossom. It is their duty now to bring in honey, pollen and water, which they do the rest of their lives. These are brought in during the day only, and at night they help to evaporate the honey by the incessant fanning of their wings. The pollen is carried in the baskets of the hind legs. Of a morning bees may be seen thus carrying great loads to the hive.

Drones hatch from the cells in about twenty-five days. They are the large, noisy bees, and, like the barking dog, they never bite. They have no sting, gather no honey and would starve to death in a clover patch. They are drones in every sense of the word. The eggs from which they are hatched are unfertilized, so they have but one parent. Their part in life is to mate with the queens.

When they are no longer wanted, they are not stung to death, as some people suppose, but are kept out of the hives by force until they are starved or chilled to death.

Bees work day and night, seemingly, never resting or tiring during honey flow. They have no mercy on those of their number that are crippled or feeble and unable to work from old age, but hustle them out of the hive, there to remain until death.

Just before swarming time you will see, if you examine closely, small cup-shaped cells. These will generally be found in the corners of the frames. Eggs will be laid in them and in about ten days after, when the cells are sealed, you may look for a swarm to come out. These are called the first swarms, and are accompanied by the old queen. In about six days after the cells are sealed, or sixteen days from the time the eggs are laid, you may look for the new queens to hatch. The first one hatched will destroy, or cause to be destroyed, the remaining queens. There may be one or more after swarms; these are led out by one or more virgin queens.

HOW TO ITALIANIZE.—For the best results for dividing and Italianizing, I would advise the adoption of the following plan: If your neighbor has some good Italian bees, you can probably get some eggs from one of his best queens. This will be the cheap-

I built of 1x4, 1 inch apart for ventilation. I have not had any trouble with roup since I adopted that plan of house. I put the open end either to the north or east.

In regard to shakes or shingles that is a matter of opinion. If you put on shingles I think that a ventilator in the gable would be necessary. I put on shakes 2 inches apart. This gives a little vent at the end of each shake. I think the cooler you can make a house the better as long as there are no draughts.

I think it not necessary to have a window in a house that has a slatted end, but in a tight house it would be, as it would be dark inside long before it would be outside.

Two and a half feet from the floor is about right for the roosts.

FLOORS.—Now in regard to floors, board is the best because you can clean it easily and it is always dry. A dirt floor gets damp in winter and absorbs considerable of the ammonia, and the hens dig holes in it which makes it hard to clean. Besides, every time you clean you take out some ground and pretty soon your floor is lower than the ground outside and water will come in. A cement floor is not good, for the gophers undermine it and rats get under it and you cannot get them out.

I think the best way to floor is to build the house on runners, put 2x4 joists on them and lay the floor on lengthwise. Some floor crosswise, but unless you put a sill in the middle it is too springy. By putting on runners instead of sills you can always move the houses without any trouble if you want to put them in a new place.

The hens should not get under a house unless it is high enough so a man can get under to clean, because they will breed fleas under there and lay; and if you ever had to get down on your knees in winter time and fish a nest of eggs out from under a house, you know what a nice job it is.

I like to close the ends under the floor with inch mesh netting. Then there will nothing harbor under the houses.

EASY TO BUILD.—There are dozens of plans in the poultry papers, but most of them are too expensive, too hard to build for the average chicken man, and most people don't want to hire a carpenter two or three days to build a chicken house. Now, the houses I build are cheap, easy to build, lots of room in them, easy to clean, easy to get at the hens to sort or cull, and are ventilated about right for this climate.

In regard to whitewash injuring fowls, I have never known it to do so in my experience. I have seen them pick it all off as high as they could reach.

As to shed or gable roofs, I prefer the gable. It takes less lumber, catches less wind and sheds water better. It is cooler in summer and does not have to be made so high.

ANSWERS.—Mr. Armstrong, in response to questions by members, added: When I built the houses tight I had roup among the fowls; with the houses as described I am not troubled any more with roup. It would be best to batten the cracks if the lumber shrinks badly. Small cracks would not be so likely to produce roup in a large house as in a small one. All the cracks in a small house, except in the front, should be battened.

The house described is for from 100 to 150 fowls.

Three roosts on each side of the alley would be better than four.

With this style of house one can reach any hen from the alley when he wishes to catch them at night for any purpose. I use a dark lantern and have no difficulty.

This house is convenient and not too heavy to haul.

In sandy locations I do not think scratching sheds are necessary. The ground should be plowed often enough to keep it loose. When the soil is adobe perhaps the scratching shed would be desirable.

Mr. Nisson suggested that the more of such things there were on the poultry ranch the more care was required to take care of them.

T. G. King asked if there were any bad effects from having an open space under the floor.

Mr. Armstrong replied that he had built quite a number of these houses for himself and for others and no one had noticed any bad results.

In response to a question, President Sales said his houses were 7x12 feet, on runners 2x8 inches, built tight on three sides except for a crack at the top of the back end. He houses sixty to eighty hens in them.

TO MAKE anything like a good job of soldering, the pieces to be soldered must have all grease and dirt removed so as to expose the clean, bright metallic surface. This is best and easiest done by the application of some acid. Muriatic acid is as cheap and as easily applied as any. It is prepared as follows: Into an earthen jar or cup put about one ounce of muriatic acid, into which drop small pieces of zinc until it ceases to boil. When the acid has cooled pour it into a four-ounce bottle and add sufficient water to fill the bottle about three-fourths full. The acid is applied with a swab, after which a thin coating of solder is rubbed over the surfaces with a soldering iron. When dissolving the zinc in the acid care should be taken to avoid inhaling the fumes which arise during the resultant "boiling."

est way for a beginner. After getting this privilege, select a frame in which comb has just been started, the lower part of which is about half way to the bottom bar. If there are two heart-shaped combs in this frame, it is just what is wanted, as the bees like to build queen cells on the edge of combs in such a manner that they will hang straight. These combs must contain worker cells only. Place this frame in the center of your neighbor's hive which contains his best queen, and in one day, if all is favorable, it will be filled with eggs. Now, about the second day after these eggs have been laid, proceed to divide your bees, after you have brought the frame containing the eggs from your neighbor's apiary.

First place a new hive, with which you have previously provided yourself, close to the one which you wish to divide. It will be necessary now to find the old queen; so you will have to examine closely the corners and bottoms of every comb until you find her, for the Black queen is hard to find. After you have found her, place the frame which she is on, together with the adjoining bees, in the new hive. If your hive is an eight-frame one, take out four more, with the adhering bees, and place them in your new hive, which now contains the queen. Leave three frames of sealed brood, with adhering bees, in the old hive, as the bees are apt to build queen cells over any larvæ that is unsealed.

To secure the best results in queen rearing, the larvæ from the time it is hatched from the egg until it is hatched from the cell must have an abundance of the food which is especially prepared for them.

Now place the frame containing the eggs from your neighbor's queen in the old hive containing the three frames, and fill the empty space with frames containing artificial foundation comb. Put on the lid and leave the hive on the old stand. After the new hive containing the queen has been filled out with frames containing this foundation comb, put on the lid and remove it two or three rods away, if possible, so that its entrance will be in an opposite direction from that of the hive on the old stand. In this position, and at sufficient distance, the bees in the field are not apt to find it, so they, with most of the old bees of this hive, will go to the new hive on the old stand. This will make a strong colony of bees—just what is wanted for queen rearing, and the new hive containing queen, comb builders and the five frames of brood will soon make a strong colony.

In a few hours queen cells will be started over the eggs in the queenless colony. Now, the tenth day after these eggs were laid, or after the cells are sealed, destroy your Black queen, and in a few hours after, when the bees have realized their queenless condition, cut out a queen cell from a frame in the old hive with a sharp, thin-bladed knife and graft it in a frame in the new hive. I advise giving queen cells at this time to queenless Black colonies, as they are apt to destroy the first cell, and you can give them a chance to destroy one or two more before they hatch. Queens will hatch in about six days after they are sealed. Queen rearing should be done only during the warm season, when there are plenty of drones. The swarming season is preferred. However, I Italianized my apiary in September and October with good success.

THE QUEEN.—Notice the queen as she hatches from the cell. She will cut open the cap and raise it, as one would the lid of an oyster can. She will now come out and run over the comb, as if she had always done so. In a few days she will mate with a drone on the outside of the hive and on the wing. This takes place only once during the lifetime of a queen. She will live three or four years and lay thousands of fertile eggs daily during the laying season.

She will lay worker or drone eggs at will—worker eggs in worker cells and drone eggs in drone cells.

Now, if your new Italian queens have met Black drones, and very likely they have, the worker bees from her eggs will be hybrids, or a cross between the Blacks and Italians; but the drones, having only one parent, will be pure Italians.

The next season purchase an Italian queen, divide as you did the previous season, destroy the old queen and provide each hive with a cell, in which is a queen from your new Italian queen. If you have been successful in this, your bees at the end of this honey season will all be beautiful yellow-banded pure Italian, for your drones, with which in all probability your queens have mated, are pure Italian.

You do not have to see the queen to know that she is in the hive, except she be a virgin queen. If you find eggs regularly laid in the base of a cell, and only one in a cell, you may be assured that she is present.

LAYING WORKERS.—Eggs in a cell are not always a sign of the presence of the queen. If a colony has been deprived of a queen for some time, and has no larvæ from which to rear one, some of the workers will take it upon themselves to lay eggs. When eggs are found two or three in a cell, and some cells without any, you may be satisfied that no queen is present, but that the hive contains laying workers. When these are present no queen will be received by them, and very likely every queen cell that is given them will be destroyed.

The laying workers can not be distinguished from other bees. Their eggs will hatch only drones. I

have destroyed them in the manner described below: Remove the hive containing them several rods, shake every bee from the comb, then place the combs in a new hive, which should be placed on the old stand. The old bees will find their way to their old stand, but the laying workers will be lost. The bees may now be given queen cells, or, if they are given eggs, they will raise a queen.

Soon after the swarming season is over the bees will begin to store up honey, if there is a honey flow. This time varies, owing to atmospheric conditions, from the middle of June to the first of August. Just before the honey flow starts, put on your comb honey super, containing sections in which have been fastened super foundation; or, if you want to work for extracted honey, put on your extracting supers, which are the same as the body of the hive and contain frames the same. In these frames there should be super foundation.

A colony of bees, if fixed for extracting, will store from 60 to 100 pounds of honey in one season. It is worth from 6½ to 8½ cents per pound. They will store a little less of comb honey, but it is worth more and there is ready sale for it. Last year it was worth about 13 cents, wholesale.

Save all old combs and every bit of wax, as it is worth when rendered out from 25 to 30 cents a pound. According to market prices and season, bees will net all the way from \$5 to \$10 per colony yearly.

ALFALFA.—Probably the plant that produces the best honey and that which produces the most is alfalfa. While alfalfa is the best plant for honey, or which I consider the best in this locality, I do not advise you to plant it for bee pasture alone.

If you are thinking of buying a home, I would advise you to purchase land that will produce good alfalfa—land that can be irrigated. This kind of land will produce well almost anything else. Plant alfalfa and, after stacking it under cover, feed it to your dairy cows and beef cattle. Hogs can be raised on the green foliage and afterwards put in good shape for market by feeding grain for a short time. I consider alfalfa one of the surest and best paying crops that can be raised, and, if handled in the manner described above—not leaving out the bees—it will prove the most profitable.

The long-distance pipe line, now building through central California for the transmission of oil to the numerous industrial concerns clustered around San Francisco bay and projected water transportation, will further break the price of coal which at a high figure so long held down the manufacturing and general industrial interests of California. The same conditions now obtain in Los Angeles and other points, and there is a general lowering of fuel bills throughout California. Fuel oil is now on the market at from 60 to 80 cents per barrel for the best qualities. Steam coal used to cost from \$8 to \$12 per ton; oil at 70 cents per barrel is about equal to steam coal at \$3 a ton, illustrating how oil for fuel excels in point of economy. Coal receipts at the port of San Francisco are constantly decreasing, but 621,888 tons having arrived during the six months ending June 30, 1902, there being a decrease of nearly 500,000 tons of coal so entering during the last two years and a corresponding increase in fuel oil consumption.

If a hole were bored through the earth, and if all friction and resistance to the passage of a ball dropped into this hole were eliminated, the only force acting being that of gravity, the ball would fall with an increasing velocity till it reached the center of the earth. At that point it would have its greatest velocity and momentum. It could not stop there. It would pass beyond the center of the earth as far as it had fallen to reach it—that is, it would go through the earth to the other side and then fall back to its place of starting. This it would continue to do forever under the conditions imposed. The motion would be no different from that of the pendulum of a clock, which oscillates under gravity alone as readily as any other falling body. A pendulum is a falling body, exactly like the supposed ball dropped into the earth. It falls to its lowest position and rises as far beyond it as it has fallen, just like the ball dropped into the earth. The mechanism of the clock is simply designed to restore to the pendulum the energy which it loses in each swing because of the friction of the air and other frictions in its motion. These the freely falling ball, by the conditions of the question, would be freed from. Hence it would move forever without loss of energy. If this be disputed or denied the disputant or denier can bore the proposed hole and try it for himself.

To TEMPER and harden a tap, bring the completed tap to a blood red, even heat. Dissolve a handful of salt in a bucket of clean water, set the water to whirling by stirring in it a stick and thrust the heated tap vertically into the vortex of the whirlpool. The tap is to be drawn to a straw color. Heat a piece of cast-iron tube to a dull red heat. The tap is then to be held in the center of the tube and carefully turned until the proper color is produced. Quenching will fix the color and finish the tap.

ONE 42-gallon barrel of oil, specific gravity .920, will weigh 325 pounds. Three such barrels of oil will produce as much steam as one ton of anthracite coal. One pound of oil, gravity .920, free from water, sand and clay, will evaporate as much water in a steam boiler as two pounds of anthracite coal, two and a quarter pounds of ordinary bituminous coal, or three and a half pounds of lignite coal.

THE RANGE.

The Ranges of Northwestern California.

From Bulletin No. 12, Bureau of Plant Industry of the United States Department of Agriculture, by J. BURTT DAVY of the University.

NO. 3.—RANGE PRESERVATION.

It is important to reiterate that if range renewal or improvement is to be accomplished, the practice of carrying the maximum number of stock on the range, or, in other words, of overstocking, must be abandoned. It is believed that it is possible to permanently raise the optimum carrying capacity, but it is impossible to do so while heavy stocking is practiced.

Success on one range, as compared with failure on an adjoining one, is not due to any difference in location or other range conditions, nor to any differences in the grasses or other plants composing the pasture; the natural conditions generally are, or have been, identical with those of adjacent and less productive ranges. The secret lies in good management, and good management primarily consists in carrying the optimum number of stock and allowing plenty of grass to go to seed—to go to waste, as the majority of stockmen would call it.

Mr. J. H. Clarke and Colonel Harding, both successful stock ranchers on a large scale, are agreed in declaring that over thirty years of experience proves that this surplus grass, instead of being wasted, is equivalent to so much capital invested in the range, and is the cause of the prosperity of the few as compared with the failure or poverty of the many. Such men do not stock nearly up to the maximum. Owning their own ranges, and therefore not having to pay exorbitant interest on the capital invested, they are content with the profits obtainable from the optimum number of stock. As a result of this, they not only maintain a uniform carrying capacity without deterioration, but gain in other ways. Their wool is always cleaner and commands a half a cent a pound more than that of their neighbors, and both their mutton sheep and their lambs command a higher price. "We aim," writes Mr. Clarke, "to keep no more stock than the range will easily support. Better a superabundance of feed than a scarcity." The amount of grass to be left to seed and the optimum carrying capacity can be determined only by actual experience. Both Colonel Harding and Mr. Clarke find, however, that about eight acres to a head of horned stock and one and a half acre to a sheep are all that their ranges can carry without injury.

FORMATION OF A SEED BED.—The advantage gained by allowing a great deal of grass to go to seed is not only the amount of seed scattered, but also the formation of a seed bed of decaying leaves and stems, which encourages germination and protects the young seedlings.

PRESERVE THE TIMBER AND BRUSH.—Next in importance to preservation of the forage plants is the conservation of moisture in the soil and the preservation of the water supply. The ranges which we are discussing lie along the headwaters of the main streams of the coast, and the preservation of a perennial flow of water in these streams is of as much importance to places many miles away as to the ranges themselves.

In their desire to increase the carrying capacity of the range many men commence first to clear the land of all timber and brush with a view of producing just so many more acres of pasture. Unfortunately, however, by clearing away all the brush and timber from the gulches and springs the moisture content of the soil is diminished, the available drinking water for stock is rendered less accessible, and there is probability of greater financial loss than profit from the labor expended. In the redwood belt it is noticeable that where both timber and brush have been cleared away springs and small streams have been dried up, although the conditions for the preservation of perennial springs and streams are more favorable there than on the upland ranges. Not only is the summer water supply diminished by removing timber and brush from the headwaters of the streams, but the soil on the steep slopes washes away with much greater rapidity, owing to lack of protection from fiercely beating rains, thus increasing the depth and steepness of the canyons, which in turn facilitates the washing away of soil from the upland slopes. In Europe and elsewhere much valuable land has been ruined in this manner.

MAXIMUM VERSUS OPTIMUM STOCKING.—While it is impossible with our present imperfect knowledge of the facts of the case to determine the exact difference between the maximum and the optimum of range capacity in any case, it seems certain that a very slight reduction in size of the "band" of stock to a point below the maximum would soon make an appreciable improvement in the carrying capacity of the range and would be a step toward its renewal.

The practical stockman will naturally inquire whether the resulting gain would be worth the sacrifice of even that number of head of stock, representing just so much hard cash deducted from the annual profits of the range. If it would not, he will not be likely to take any further notice of the suggestion.

(TO BE CONTINUED.)

Agricultural Review.

ALAMEDA.

RAVAGES OF GRASSHOPPERS.—Livermore Herald: It seems that Livermore valley is not to escape the ravages of grasshoppers entirely. For the past week they have been busy in the vineyards south of town. On the Lorraine place they have completely stripped the foliage from several rows of vines.

BUTTE.

JUMPED ON RATTLESNAKE TO HIS SORROW.—Register: On Sunday morning B. Cochran of Thermalito hired a horse to go down in the foothills east of Honcut on some business. In the foothills he saw a rattler in the road and concluded he would kill the snake. Neither stick nor rock being handy, Cochran jumped on the snake, and, as he weighs 200 pounds, this should have been enough to kill any snake. Cochran, however, had not counted upon the horse, which gave a quick jerk just as he made his jump, and, in consequence, he failed to kill the reptile at the first dash, and before he was trampled to death he had bitten Cochran twice. A companion took Cochran at once to Honcut for medical treatment. The bitten man was made very sick by the bites and came near dying.

COLUSA.

PRUNE CROP A MONTH LATE.—Sun: The drop of prunes, which occurs usually in June, was deferred for some reason until July this year. It is believed that the crop will be smaller by 10% than the estimates that had been made, owing to the drop coming a month late. The quality of the fruit will likely be improved by the drop, as the smaller quantity per tree will tend to a better development of that which remains.

FRESNO.

WHEAT ACREAGE SMALL BUT YIELD GOOD.—Republican: The grain harvest will be about an average output for this county this year, somewhere in the region of 25,000 tons of wheat. The acreage this year is very much less than for many years past, but the yield is better. E. E. Manheim, manager for the Kutner-Goldstein Co., says the experience of recent years is rapidly teaching the farmers that summer-fallow is much more profitable than winter sowing. Grain is moving freely, and practically none is being stored. Most of it is going south, as the prices paid for it here are better than at Port Costa, less freight, and the demand is better to the south of us.

LOS ANGELES.

CAMP FIRES LEFT BURNING.—Pasadena Star: Claude Willetts, an Azusa rancher, was arrested by Deputy United States Marshall G. F. McCulloch last week and brought before United States Commissioner E. H. Owen on the charge of leaving a camp fire burning in the San Gabriel forest reserve. Willetts was released on a \$250 bond to appear for trial. It is claimed that a number of warrants have been issued for similar offenses. All the arrests grow out of the carelessness of members of picnic parties who light fires on the forest reserves to prepare luncheon and then go away without seeing that all the fire is extinguished. The maximum penalty for leaving a camp fire unprotected in Government reserves is a fine of \$1000 or imprisonment for one year.

MADERA.

BIG FIGHT BETWEEN GRASSHOPPERS AND VINEYARDISTS.—Mercury: Out at the Sayre vineyard a great battle is being fought—thirteen of Mr. Sayre's men on one side and a host of grasshoppers on the other. For several days the fight has been waged incessantly and the invading army of insects has been driven back from the vineyards. The destructive insects made their appearance about a week ago in large numbers and attacked the vines bordering a ditch. The men in charge of the ranch went immediately to work to drive them back and have partially succeeded. Only a few rows of vines close to the ditch have been injured by the pests. It takes constant driving to keep them from invading the vineyards in such numbers as to eat up every green thing in sight in a short time. The grape crop of the vineyard is a valuable one and nothing will be left undone to save it. Thirteen men are working hard to drive the hoppers into the alfalfa. A big iron trough full of crude oil will be dragged over the land. Over the trough a screen will be fixed so that the hoppers in flying will strike against it and fall into the oil and perish.

A COW GOES DOWN THE FLUME.—Mercury: A remarkable ride was taken by a cow belonging to Mr. Nichols of Fresno Flats. The animal made a trip of 25 miles on a train of lumber, going over some of the steepest grades in the system

of the Madera Sugar Pine Co.'s flume. The cow was passing along the flume near Fresno Flats one day last week at the place where the flume enters a cut, and in some manner fell into the water. Lumber was being shipped at the time and as a train was coming along the cow straddled it and started on the long journey. On the trip were several steep grades, but the bovine rode them in safety. At the Ellebrook and C. King station the station men went to the rescue and hauled the cow out. She was not injured in the least. When milked that night by the section tenders the cow gave a big bucket of milk, which was well watered but otherwise all right.

NAPA.

BUDDING THE VINE.—Sonoma County Farmer: M. Braugher spent several days at St. Helena last week and while there looked into the grape budding that is being experimented with. He found all the vineyardists with whom he talked elated over what is now believed by them to be the true way of changing their vineyards. Budding can be done at much less cost than grafting, and, where the work is properly done, is just as successful. F. F. Kohler, an expert, has no hesitation in saying that hudding will take the place of grafting. He has huds set the last of April that have several inches of growth already.

ORANGE.

SPIDER'S BITE.—Anaheim Gazette: Julius Lindorff was bitten by a spider yesterday morning and was for some hours in a dangerous condition from cramps and depression, but was finally relieved by free administration of remedies. Health Officer Bickford says that damp, dark vaults and rooms and unfrequented places are breeding places of these spiders, and urges the people to clean out such and exterminate the bug.

SACRAMENTO.

PERKINS NOTES.—TO THE EDITOR: During the past week we have had very hot weather. On July 23 and 24 there was a hot north wind, with the thermometer 110° in the shade, causing great damage to grapes and other tender fruits and plants. We now have a change for the better, with cool winds from the Golden Gate. Fruit is ripening very fast and the shipping firms are working night and day to send it to the Eastern markets. The Early Crawford peaches are now coming in. Tragedy prunes are nearly gone. They were up to the average and a heavy crop. Prices ruled low in the Eastern markets. The great strikes in Chicago and the Pennsylvania coal fields acted unfavorably, together with lateness of fruit in California. Harvesting and threshing are nearly done, crops not yielding up to the expectations of farmers. Help is scarce and wages higher than other years, while prices of everything the farmer uses are higher, and prices for produce tend downward, leaving a very small margin for profit.—P. H. MURPHY, Perkins.

SAN BERNARDINO.

HONEY CROP A COMPLETE FAILURE.—Times-Index: Southern California will produce less than seventy carloads of honey this year, as against a regular output of 500 carloads in previous seasons, is the alarming statement made by County Bee Inspector Herron. This year San Bernardino can count on no more than ten carloads of honey, Riverside eight, Ventura ten, San Diego eight and Los Angeles perhaps fifteen or twenty carloads. The work of the bee inspector has resulted in practically ridding the county of foul brood, the most dreaded disease known to the apiarist. The disease can be contracted by other bees attacking the infected hive and carrying off the honey, but once the brood is destroyed and the swarm hived in new, clean boxes, all danger is over. This is the practice followed by Bee Inspector Herron, though it is understood that in Riverside the total destruction method is employed. Not only does the bee raiser face the calamity of no honey crop this year, but also of no increase in the number of hives by swarming. Experienced raisers are advising the feeding of the bees at once to save them. The food recommended is equal parts of granulated sugar and water, boil, skim the syrup, and put it out where the bees can get it, putting splinters of wood in the vessels for the bees to light on.

SAN JOAQUIN.

REFUSED \$25 FOR A PIG.—Lodi Sentinel: Robert Ing has on his ranch near Acampo a pig which has no ears. Mr. Ing has been offered \$25 for the freak pig, but will not part with it.

A BIG PLUM.—D. S. Burson has a plum tree growing in his yard that produced a plum measuring 7 inches in circumference. This is the second year of its growth from the Napa nursery. [A plum that had two years to grow ought to be big.]

SAN LUIS OBISPO.

THE SQUIRREL PEST.—San Miguel Messenger: In view of the fact that numerous citizens of the county have petitioned the board of supervisors for a bounty of 2 cents for squirrels, the board offers the suggestion of organizing squirrel killing expeditions, using poison as an exterminator. They think that if the citizens would take one day each month and systematically cover the entire territory, they could soon rid the county of the pests. If this is done, the supervisors will furnish the poison and lend their hearty co-operation.

MAMMOTH STRAWBERRIES.—Arroyo Grande Herald: John Ingram has some monster strawberries this summer on the Craighill place. Some of them measured 5 inches each way and one portly giant stretched the tape line to 6 inches. They are fine flavored, too, which is not always usual with the large varieties.

SANTA CLARA.

LARGE APRICOTS.—San Jose Herald: On the Montague ranch, near Agnews, Foreman D. A. Lamb is now shipping apricots East which run only 5½ to the pound. The fruit is perfect in color and shape and is of the St. Amroise variety. The ranch is equipped with its own drying plant, and what fruit is not shipped will be dried. David J. Giraudo also has a crop of wonderfully large apricots on his ranch in the foothills near Mountain View. Some selected run only four to the pound, these being, of course, unusual. The color this year is much brighter and smoother than last. The trees in each of these orchards are young and the fruit was carefully thinned. The trees were not irrigated.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: The apple crop of Pajaro valley is going to be much lighter than it was last year.—There was a report last week of the sale of twenty cars of Bellefleurs at 85 cents per box, but sales have been made since then at lower figures.—Woolly aphid is doing marked damage in some orchards this year. It is a pest which affects the selling value of an apple as much as codlin moth.—The red spider has made its appearance in Pajaro valley orchards lately. The spider is a minute insect, but is capable of doing serious damage to young trees. Its favorite point of attack is underneath the leaves. The pests congregate there in great numbers and suck the life-giving fluid from the trees. Powdered sulphur scattered over the leaves is recommended as a first-class remedy.

SHASTA.

TO EXTERMINATE WEEDS.—Searchlight: The Southern Pacific Co. is trying an experiment which it hopes will be effectual in ridding the roadbed of weeds. The old method of painfully digging up grass and weeds from the roadbeds is too slow and expensive in this modern age, and more rapid and effectual methods are desired. The company is employing a chemical preparation of herbicide, which, when sprinkled upon the offending vegetation, causes it to wither and die, after which it is swept away by the winds. Whether this also kills the roots it is not yet known.

DISFIGURING THE BRANDS ON CATTLE.—Stockraisers in the Bella Vista section are complaining of the pranks of some unknown miscreant and are determined to run him to earth if possible. He is disfiguring the marks and brands on cattle and hogs owned in that locality, and, as no apparent brand is substituted, it would appear to be a case of sheer cussedness instead of an attempt to steal. G. R. Williams states that the brands on three of his cattle were of late disfigured, and several of his neighbors have had similar experiences. All of the brands are lawfully possessed and are of record.

SOLANO.

BIG GRAIN CROP.—Benicia New Era: Grain growers generally throughout Solano county will experience a prosperous season. The crops have been good and the returns will prove remunerative. Those who produced barley are realizing excellent pecuniary returns. Adobe lands near Dixon, which are on the market for not to exceed \$4000 a quarter section, have yielded from twenty to twenty-five sacks of the best barley this year. The crops have equaled and in some instances exceeded the value of the land. With the exception of grain growers in reclamation districts where damage resulted from the inundation last winter, farmers will realize the best season for many years.

SONOMA.

SERIOUS INJURY TO GRAPE CROP.—Sebastopol Times: The unusually warm weather of the past three weeks has injured grapes in all parts of Sonoma county to an immeasurable extent. Never

before has the heat been so intense for such a length of time, and not only have the grapes suffered, but fruits and berries of all kinds have been scorched.

BLACKBERRY PRICES.—Santa Rosa Press-Democrat: The packing of blackberries has commenced at the big cannery and very soon the rush will begin in earnest, as the warm weather is ripening the berries fast. At the local cannery between 400 and 500 tons of blackberries will be packed. The California Cannery Association, who own the cannery here, has contracted for nearly 400 tons of blackberries with the growers in the Gold Ridge district, around Sebastopol, at \$40 per ton, and in addition has term contracts at a cheaper figure for over 100 tons more.

A SMOKER SETS FIRE TO A LOAD OF HAY.—Healdsburg Tribune: A few days ago a wagon and its load of a ton and a half of hay were destroyed on the county road near Healdsburg. Charles Particelli, the owner, allowed a man to take a ride and the latter was smoking a pipe. The careless smoker set fire to the hay. The fire was so fierce that the men barely had time to unhitch the horses. Particelli was severely burned on the face and hands.

SUTTER.

BETTER PRICE FOR ALMONDS.—Sutter County Farmer: C. R. Boyd of this place closed a contract recently with the Falk Co. for his almond crop, which will amount to about thirteen tons. The following prices were made: Nonpareil, 10½c per pound; IXL, 10c; Routier soft, 9½c; Drake's Seedlings, 9c; Languedoc, 8½c.

DRIED PEACHES.—There is but little doing as to making prices on the dried peach crop. The general outlook is for the market to open at 4½c to 5c per pound, with higher rates for choice Muirs. The growers should endeavor to keep the quality of their dried product in the extra grades and get the top prices.

SUMMER PRUNING OF APRICOTS.—Several of the apricot growers in this locality have pruned their apricot trees as soon as the fruit was picked, and, by following this plan, have generally a fair crop each year, even on the shy-bearing trees. By cutting off the old wood and getting a new growth early in the season, more buds are produced, and they are much healthier, thus insuring a good crop.

WORMS INJURING THE BEAN CROP.—Marysville Democrat: Many farmers of District No. 70, this county, whose grain crops were destroyed by the winter floods, are victims of ill luck. Those who hoped to recover their loss by planting beans in the flood-swept district, now complain that the beans are in danger of being destroyed by the myriads of worms which have begun feeding on the plants.

TEHAMA.

TOMATOES SLOW IN RIPENING.—Red Bluff News: Tomatoes are coming along very slowly this year in the gardens in the vicinity of Red Bluff. In Antelope valley Bert Bressler has out several thousand vines and Tabor Bros. as many more. The vines are well covered with fine, large tomatoes, but they still retain the green color.

BUYING ALMONDS.—Red Bluff Sentinel: Almond growers are selling their crops for 7@10c per pound. The almond crop in Tehama this year will exceed 100 tons, and we are informed that the James Feely Co. has already secured over half the crop from the Kraft and Cone orchards and the Hatch orchard south of Red Bluff. The price paid was 10c per pound for IXL, Nonpareil and Ne Plus Ultra varieties, and 7c for Languedoc, Golden State and California paper shell.

TULARE.

THE WHEAT SITUATION.—Visalia Delta: John Fulgham, a well-known authority on wheat and a thorough farmer of this county, when approached upon the wheat situation said his crop this year would not pay for harvesting, though not much short of an average yearly yield. Mr. Fulgham sowed 400 acres of fine land to wheat last winter and got a good stand. His crop was fairly good—above the average, and still he did not harvest it. He said it would not pay, as in the first place the price was not sufficient to encourage a man to devote his time and money in taking the chances. A second case was that there being plenty of work this season in handling all products, the laborers set their own price for wages with a stipulation that they be granted the privilege of working only a short time. He sized up the situation and concluded to feed his wheat to hogs, satisfied that he will realize more in that way than if he had harvested. He experienced the same trouble with hay. Forty acres of alfalfa, mixed with barley, were mowed by Mr. Fulgham before help was secured to stack it, and he was forced to turn his stock in the field.

THE HOME CIRCLE.

The Boy Who Laughs.

I know a funny little boy—
The happiest ever born;
His face is like a beam of joy,
Although his clothes are torn.

I saw him tumble on his nose,
And waited for a groan—
But how he laughed! Do you suppose
He struck his funny-bone?

There's sunshine in each word he speaks,
His laugh is something grand;
Its ripples overrun his cheeks
Like waves on snowy sand.

He smiles the moment he awakes,
And till the day is done;
The school-room for a joke he takes—
His lessons are but fun.

No matter how the day may go,
You cannot make him cry—
He's worth a dozen boys I know,
Who pout and mope and sigh.

—Sunbeam.

Daybreak.

A wind came up out of the sea,
And said, "O mists, make room for me!"

It hailed the ships, and cried, "Sail on,
Ye mariners, the night is gone!"

And hurried landward, far away,
Crying, "Awake! It is the day."

It said unto the forest, "Shout!
Hang all your leafy banners out!"

It touched the wood-bird's folded wing,
And said "O bird, awake and sing!"

And o'er the farms, "O chanticleer,
Your clarion blow; the day is near!"

It whispered to the fields of corn,
"Bow down, and hail the coming morn!"

It shouted through the belfry-tower,
"Awake, O bell! proclaim the hour."

It crossed the churchyard with a sigh,
And said, "Not yet! in quiet lie."

—Henry Wadsworth Longfellow.

The Lost Quarry.

In the fall of 1880 I was a schoolboy, 14 years of age, in the little hamlet of Towanda, in Butler county, Kansas. It was the headquarters of McGillespie & Evans, buyers of beef cattle and hogs, and of the South-Central Kansas Marble and Freestone Company.

This company had the curious experience of losing one of its quarries by the great flood of Pecan creek in 1877. The original owner, who alone had known precisely where to begin operations, had been drowned. The marble specimens, on the strength of which he had succeeded in interesting the company, were of a pink and purple mottled stone, close in texture, free of cleavage, and susceptible of a fine polish. None of the directors had been able to find the exact place after the freshet had radically changed the conformation of the valley. So, while they were engaged in developing other properties, they offered three hundred dollars to any one who should rediscover the quarry for them, and there the matter had rested for three years.

McGillespie & Evans, the stock dealers, bought thousands of fat steers and hogs during each season and after collecting them in their big corrals beside the Sweetwater river, would drive them ten miles across country to El Dorado, the county seat, where they were shipped by rail to Kansas City, St. Louis or Chicago. These trips were usually made at night, to avoid the heat of the sun, and were deeply interesting to the boys of the community.

After much pleading, I had been permitted to accompany one of the drives, and thereafter was regularly engaged as McGillespie's assistant whenever my parents would permit me to go. Usually the drive was made on Friday night.

In September McGillespie was thrown from a mustang, and had his

left leg broken. His partner, Evans, with Tony, the herdsman, was down "in the Nation," as the Indian Territory was called, buying cattle from the Cherokees.

The big corral was filled almost to overflowing with yellow, black and parti-colored hogs, bought within the past week; and as the price was reported likely to fall suddenly, it was necessary to get the hogs to Kansas City at once.

In his pain and anxiety McGillespie sent for me, and asked if I could get the hogs safe to El Dorado that night.

"Alone?" I asked.

"Well, not exactly, but pretty near, pretty near," cried the Scotchman, impatiently. "Ye can have Slicker and Susie and young Tony, but none o' them youngers from school. I've tried 'em, an' they're no mortal use."

Slicker and Susie, the trained dogs of the firm, half Scotch collie and half wolfhound, were invaluable assistants. Ten-year-old Tony, the Italian drover's son, had grown up beside a stock corral; but our force was pitifully weak to manage four hundred hogs.

There was not a fence, aside from a few Osage orange hedges, between Towanda and El Dorado; and the road was lined with corn fields of from ten to two hundred acres each.

McGillespie told me he would pay me twenty-five dollars if I got the drove safe to El Dorado before sunrise, but would deduct a dollar for every shoat left by the wayside.

Just at sundown we opened the corral gates. Slicker and Susie were on opposite sides of the main street of the hamlet, about one hundred yards in advance. Tony and I skirmished on the rear flanks, and Kitty, the experienced road mare, walked slowly behind, dragging a rattling buckboard. In this manner we made good progress, and to my amazement passed through the settlement, and had gone fully four miles beyond before dark, without the loss of a hog.

Then we reached a point where the road skirted Cochrane's one-hundred acre corn field. On the left was an old, ill-cared-for hedge 40 feet high in places. Here the drove jammed in spite of the dogs' efforts to keep the leads moving, and some of the hogs were crowded against the hedge and severely pricked by the long, sharp thorns. These hogs set up a fearful squealing, and bolted over the backs of the others into the corn field, where they went scurrying off, still squealing as they ran.

Here was a pretty mess. By Tony's advice I paid no attention to the fugitives, but instead hurried the drove past the corn field and turned them into Cochrane's big corral, which happened to be empty.

Then, going back to the farther edge of the corn field for the stray hogs, we beat our way through it with the dogs on either flank, and found our quarry grouped in a gulch. They had to be bitten freely about the ears by Slicker before they would start.

Then they ran like deer, making a three-mile detour before we finally headed them into an angle of the Cochrane corral. When we had released the main body the strays mingled with them, and we congratulated ourselves that the worst was over.

But it was now one o'clock at night; we were already tired, and had made only two-fifths of our journey.

For the next three miles we had little trouble. But some of the older and fatter hogs were becoming tired. They took to lagging, and our switches had very little effect in persuading them to move on.

Thinking that all were by this time tired enough to keep the road, I called in the dogs to drive from behind, while Tony and I took the places on the flanks. The dogs, by nipping at ears or hams, kept the hogs moving much better than we could.

We had just reached the Pecan valley and were almost in sight of El Dorado, when a dozen young hogs suddenly dashed to the right, passing between me and the creek. Susie would have headed them with ease, but I fell into a gopher's hole, and nearly broke my leg. As I scrambled to my

feet, I saw the runaways' backs glisten in the moonlight as they dashed into a clump of underbrush a hundred yards away.

Just then we heard a voice calling from the bridge. It was John Tobin, the shipping agent of the firm at the station, who had ridden out on the chance of meeting us.

Leaving him to help Tony get the drove into the shipping yards, I borrowed his pony, whistled for Slicker to follow, and galloped after the runaway pigs.

Without the borrowed pony I could never have overtaken them, for they displayed wonderful speed and endurance, and continued to press on at a sharp trot for miles, over an exceedingly rough country. And the dog was just as necessary to me in the pursuit as the horse. He followed by scent, while in the semi-darkness I would have found it impossible to track the hogs by sight.

We kept on for nearly an hour, following the creek bottom. But at the end of that time the fugitives turned toward the low bluffs. Slicker was an eighth of a mile ahead. I was enabled to follow because at intervals he barked, probably whenever the scent was keenest.

Suddenly he began to bay loudly, and riding up I found the pigs cornered in a sort of a pocket in the bluffs, apparently formed by a washout. At the back there was almost a cave, and in this the hogs were huddled, and rushed savagely at Slicker when he endeavored to drive them out.

My patience was at an end. Slipping off the pony, which I left at the down-river side of the pocket, I ran toward the cave, encouraging the dog in his attack, and at the same time fumbling for stones along the side of the bluff.

I gathered a dozen or more, dropping into the pockets of my canvas jacket all I could not hold in my hands. Then I "went for" the pigs, hurling the stones at them and shouting wildly.

The onslaught had the desired effect. They broke away and ran in a compact body up the creek valley.

Scrambling on the pony, I followed them vigorously. They were pretty tired when we got back to the road, where I found Tony and Mr. Tobin awaiting us. Just at sunrise we turned the last hog into the stock yard enclosure.

There were just five missing, but we concluded they must have been lost back in the Cochrane corn field. Everything considered, it had been a fairly successful drive.

After delivering the drove to Tobin, I recollected that I had not thrown at the hogs all the rocks I had collected. The two that remained I drew from my pocket, intending to throw them away. Then I saw that one of the stones was a fragment of marble, identical with that so long sought for by the quarry company. I said nothing, but put the fragment back into my pocket.

Tony and I then started to drive home. We had the good luck to find the five missing hogs by the way. Driving them before us we reached Towanda shortly after noon. McGillespie cheerfully paid me the twenty-five dollars, of which I gave Tony ten.

Then I set off to find my older brother, Bob. After showing him the fragment of marble, I suggested that I had stumbled by chance upon the missing quarry. At two o'clock that afternoon we mounted our ponies and rode rapidly on my trail of the night before to the pocket where the last hogs had turned at bay.

What I had taken for a bluff was a mass of debris piled fully four hundred feet in advance of the true bluffs, which were only about ten feet in height at that point. The lost quarry had been buried beneath the debris, but its shoulder now was exposed below the cave where the pigs had been cornered.

With pieces of crooked stick we dug away the earth, and in two minutes exposed the long-lost marble ledge. Taking a number of specimens with us, we returned to Towanda, and the company cheerfully paid me the three hundred dollars within a fortnight.—Youth's Companion.

Keep Out the Flies.

Some people think it is healthful to have flies around—say that they are natural scavengers, etc. What they do with the offending matter after they take it away is not stated; but as they do not wander far from where they get their supplies, it is not to be supposed that they transport very far the debris they may accumulate.

They certainly injure the nerves of such persons as they encounter, or rather as encounter them; and thus very often drive people into sickness that might otherwise have been avoided; and there is no knowing how many germs of disease they carry from one place to another.

"Several years ago," says an observing lady, "sitting near a window, I noticed a fly buzzing on the window-sill; he seemed clumsy, would fly a little, then stop, and clean his wings and body with his feet, after the manner of flies. I was interested, and got the microscope and looked through it. The fly was covered with little brown parasites, so small that I could not see them with the naked eye. No wonder it was clumsy! I took a fine needle and pushed one off. It clung with its proboscis, just as a plant aphid does on the leaf of a plant. The fly seemed to like my efforts on its behalf, and kept still. I felt that I must cremate it and its companions together; while doing this, I made up my mind that no more flies should come inside my dwelling—if I could help it. I would fight it out on that line if it took all summer, like our famous general; I still hold to that mind."

Some people give flies the full range of the house, but welcome them to inhospitable graves of adhesive paper. It is a cruel sight—scores of hundreds of these little insects, caught by a leg, a wing, and gradually smothered to death in the merciless substance which they had supposed contained nourishment instead of death.

The best way is to keep them where they belong—out of doors. They can make a living in the open, and can there enjoy all their allotted days and hours. It does not cost so very much to put screens in every window and doorway, and if you begin early enough in the spring and keep at work, you can have a flyless house all summer.

A good many screens do not screen; there are little defects in them, and places through which flies can crawl. The little insects are wonderfully ingenious at finding these open doors, and although the number that get in may be much diminished by even faulty screens, it is far better to have them practically invulnerable, which may be very easily done.—Everywhere.

A Multiplication-Addition Table.

The following table from Popular Mechanics is interesting to look at and ingeniously constructed:

1 time 9 plus 2 equals 11.
12 times 9 plus 3 equals 111.
123 times 9 plus 4 equals 1111.
1234 times 9 plus 5 equals 11111.
12345 times 9 plus 6 equals 111111.
123456 times 9 plus 7 equals 1111111.
1234567 times 9 plus 8 equals 11111111.
12345678 times 9 plus 9 equals 111111111.
1 time 8 plus 1 equals 9.
12 times 8 plus 2 equals 98.
123 times 8 plus 3 equals 987.
1234 times 8 plus 4 equals 9876.
12345 times 8 plus 5 equals 98765.
123456 times 8 plus 6 equals 987654.
1234567 times 8 plus 7 equals 9876543.
12345678 times 8 plus 8 equals 98765432.
123456789 times 8 plus 9 equals 987654321.

"You had clams on the half-shell," explained the restaurant proprietor, "and you bill is \$1." "But," explained the patron, "it seems to me you ought to make a reduction for the shells; I didn't eat them."

PROF. MOREANDMORE — "The books of the Chaldeans were written on bricks—" Sporter (in a still small voice)—"They must have made hard reading."

BELLA—"He said his ears burned awfully last night." Stella—"Well, I'm sure he's got ears to burn."

Song.

We sail toward evening's lonely star,
That trembles in the tender blue;
One single cloud, a dusky bar
Burnt with dull carmine through and
through,
Slow smouldering in the Summer sky,
Lies low along the fading West;
How sweet to watch its splendor die,
Wave-cradled thus and wind-caressed!

The soft breeze freshens; leaps the spray
To kiss our cheeks with sudden cheer.
Upon the dark edge of the bay
Light-houses kindle far and near,
And through the warm deeps of the sky
Steal faint star-clusters while we rest
In deep refreshment, thou and I,
Wave-cradled thus, and wind-caressed.

How like a dream are earth and heaven,
Star-beam and darkness, sky and sea;
Thy face, pale in the shadowy even,
Thy quiet eyes that gaze on me!
O realize the moment's charm,
Thou dearest! We are at life's best,
Folded in God's encircling arm,
Wave-cradled thus and wind-caressed!

—Celia Thaxter.

The Grass.

The grass so little has to do—
A sphere of simple green,
With only butterflies to brood,
And bees to entertain,

And stir all day to pretty tunes
The breezes fetch along,
And hold the sunshine in its lap
And bow to everything;

And thread the dew's all night, like pearls,
And make itself so fine—
A duchess were too common
For such a noticing.

And even when it dies, to pass
In odors so divine,
As lowly spices gone to sleep,
Or amulets of pine.

And then to dwell in sovereign barns
And dream the days away—
The grass so little has to do,
I wish I were the hay!

—Emily Dickinson.

To Avoid Wrinkles.

The artistic Japanese have solved an important problem and defy wrinkles and crow's feet by relegating bric-a-brac to the background.

Bric-a-brac is responsible for more wrinkles and crow's feet than age or illness.

The woman who is really anxious to retain her looks to a green old age will take a lesson from the wise and artistic Japanese, who shows absolutely nothing in her drawing room except a lovely flower and a screen, and perhaps a beautiful vase.

The Japanese collector of pictures keeps all her treasures stowed away in what is called a go-down—her storehouse—and her pictures are brought up one at a time if any visitor is present or expected. Usually a single picture is brought in and hung up, and you enjoy that beautiful picture by itself.

Does this not tell the whole secret of the almond-eyed beauty's fair, un-wrinkled skin and refreshing, placid expression?

Who will found a club for womankind and call it the No Bric-a-Brac Club, and at once institute a new order of things, in which rest—perfect rest—can be found, with rose leaf complexions as one of the rewards of membership? Also freedom from worry, for it is worry which is wearing out the nerves of the average American woman.

English women have formed a club which commends itself to consideration. It is called the Don't Get Tired Club. Its main object is the organization, on a hygienic basis, of shopping—as pernicious a habit, if carried too far, as the bric-a-brac habit.

The members pledge themselves, on their word of honor as gentlewomen, not to shop the whole day "without suitable and proper refreshment." Stringent rules are drawn up of what is and what is not allowed under this heading.

Then each member swears to do her shopping systematically, to make out a list of everything she wants to buy,

and never to toil from shop to shop to see if she can't get it cheaper. A limit is placed on the amount of shopping that may be done in a day—three hours for town women and five for suburbanites. The carrying of parcels is absolutely forbidden, and shopping in a short skirt made obligatory.

Here are some worry don'ts:

Don't start nervously if a child makes a noise or breaks a dish. Keep your worry for broken bones.

Don't sigh too often over servants' shortcomings.

Don't get wildly excited if Bridget has neglected to dust the legs of the hall table. The welfare of neither your family nor the nation is involved.

Don't put too much of yourself into the ordering of the household, or the management of servants, or the care of the ornaments. Let the ornaments of the house be the friends who frequent it.

Don't exhaust all your reserve force over petty cares. Each time one loses control over herself, her nerves, her temper, she loses just a little nerve force, just a little physical well being, and moves a fraction of an inch farther on in the path that leads to premature old age.

Don't work when you are not in a condition to do so.

Don't go to bed late at night and rise at daybreak and imagine that every hour taken from sleep is an hour gained.

Don't eat as if you only had a minute in which to finish the meal, or eat without an appetite.

Don't give unnecessary time to a certain established routine of housekeeping when it could be much more profitably spent in rest or recreation.

Don't always be doing something. Have intermittent attacks of idling. To understand how to relax is to understand how to strengthen nerves.

Don't worry others, above all things, by forcing them to share your worries. Worry is called the American national disease and "Americanitis" is its distinctive name.

Don't fret and don't worry are the most healthful of maxims.—New York Times.

Prevention of Deafness.

The great and constantly increasing prevalence of deafness should make parents and all those having charge of the young very careful in the treatment of the ears. Many cases of deafness in adult life could be traced back to one of several easily preventable causes, if all were known.

First, mistaken ideas as to cleanliness are fruitful of mischief. The old rule that while the outside ear must be kept clean, the inside ear will take care of itself is a good one. Nature provides a secretion—the natural wax—to this end. There are also tiny, fine hairs at the entrance to the canal, the work of which is to act as sentinels against dust and dirt.

The wax itself is bitter in taste, and is a guard against insects. Only by rare accident would an insect enter the ear, and when in it would be quite as anxious for release as its unwilling host. When this accident does occur a little sweet oil should be poured in to drive the insect out.

The faithful but ignorant nurse should be instructed not to roll up corners of washrags and towels and force them into the opening. Even if no further harm is done some water will almost certainly find entrance, and this is not only dangerous in itself, but tends to injure the protective qualities of the wax.

Another great fault is the ignoring of the danger-signal of earache in children. In former days, when less was known about the treatment of the ears, and when there were no specialists, the administration of some pain-reliever, such as hot applications or laudanum water, and the ignoring of the reason behind the ache were more excusable than they would be to-day. To relieve the pain is well so far as it goes; but at the same time a specialist should be consulted as to what lurks behind the pain. Many parents who would think it a shame to let a child suffer from tooth-

Poor time
has its
ending



Good time
has its
beginning

in an

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ache and not take it to the dentist will watch some poor, little, helpless sufferer grow up on earache, as it were, and seem to regard it as some mysterious insult on the part of nature. Most of nature's insults are patient, faithful warnings in disguise, and this is especially true of ear symptoms in the young.—Youth's Companion.

DOMESTIC ECONOMY.

Hints to Housekeepers.

The way to cook beef tea is in a bottle. Cut up a pound of beef into small square pieces, put them in a preserve bottle and two cups of cold water; stand the bottle on a saucer in a saucepan of hot water and let it come almost to a boil. After remaining there about two hours it will be ready for use, and when seasoned is very good.

Use bits of jelly to enrich pudding. Small quantities of berries serve the same purpose. A cup of ripe currants or any sort of berries can be mashed into a cup of sugar and added with a beaten egg to make a pie. Even half a cup of berries or jam adds a delicious flavor to a quart of ice cream. Save the leftovers or syrup from cans of fruits for gelatine desserts, sherbets, creams, puddings, sauces, charlottes, fruit cottage puddings, with stale bread or cake, or to pour over French pancakes.

If there is any cornmeal mush left from breakfast do not scrape it in cold spoonfuls into a bowl; reheat and allow it to become smooth, then pour into a square cake tin, calculate the amount of mush to the size of the tin, so it will make a cake 2 inches in depth. Cover when it cools and set in the refrigerator. When it is needed for breakfast or supper, cut into squares about 4 inches in size and roll them in flour till quite dry. Drop into smoking hot fat and fry brown. Drain and serve hot with syrup.

Peach and pear stains on linen are some of the most obstinate with which a housekeeper has to contend. Boiling water, useful in the case of most other fruit stains, rarely removes those mentioned. Lemon juice thickened with salt, powdered starch and a little soft soap spread thickly over the stains, the articles then spread in the sun, will often remove them. Sometimes only oxalic acid is successful. It should be used with care, and afterwards the linen should be rinsed in weak ammonia water.

Chicken paprika may be used as a luncheon or supper dish, or as a dinner course, and lends itself readily to the chafing dish. Boil two chickens until they are tender, and the bones can be removed readily. Make a sauce of a half cupful of strained tomato juice, one cupful of cream, two tablespoonfuls of flour. Heat the tomato juice and add the butter. When the latter is melted stir in the flour and cook for five minutes, stirring constantly until smooth. If there are any lumps, strain the sauce. While hot, add the cream, and when hot again season with paprika to taste; turn in the chicken, and when

heated through serve. In place of the tomatoes all cream may be used, and just before removing from the fire the yolks of two eggs may be beaten in.

Cold pork is, in the esteem of some persons, better than when hot. Serve it in neatly cut slices for tea or luncheon at the second meal, then take stock of the remains and look to the future. Roast pork bones make an excellent brown stock, almost as rich as that from roast beef. Trim the scraps from the bones and consign them to the soup kettle. Cut with a keen knife all the fat from the meat that is not to be served cold. This fat rendered down makes an excellent dripping for potatoes. Chop it, set in a covered jar in the oven and allow it to melt. Strain and set away in the refrigerator.

Domestic Hints.

CALF'S TONGUE WITH TOMATO SAUCE.—Take two calves' tongues, soak them in warm water for an hour; drain and parboil for ten minutes; cool, pare and scrape the white skin off. Into a saucepan put one tablespoonful of flour, stir into it gradually one cup of water. When it boils, add one wine-glass of vinegar, one bunch of parsley and an onion with three cloves stuck in it. Cover and cook slowly for an hour. Drain on a cloth; dish up and serve with tomato sauce over it. The tongue can be boiled the day before and then reheated for breakfast, and the tomato sauce made and poured over.

RASPBERRY VINEGAR.—Put a pound of fine fruit into a bowl and pour over it a quart of the best wine or cider vinegar. Next day strain the liquor on a pound of fresh raspberries. The following day do the same. Do not squeeze the fruit, but drain as dry as possible by lightly pressing it. The last time strain it through muslin previously wet with vinegar to prevent waste. Put into a preserving kettle with a pound of sugar to every pint of juice. Stir until the sugar is melted and let it cook gently for five minutes, skim it. While cold, bottle and cork well.

TOMATOES AND MUSHROOMS.—Put on a pint of tomatoes in a saucepan and cook for fifteen or twenty minutes until nearly all the water has evaporated, season with salt and pepper, add a generous tablespoonful of butter, a tablespoonful of breadcrumbs and half a pint of fresh mushrooms chopped fine. Cook until the mushrooms are tender. Have some bread cut in nice slices, toasted and slightly moistened with warm milk. Pour the tomatoes and mushrooms over it and serve very hot.

MOCK BISQUE.—One can tomatoes, three pints milk, one tablespoon flour, one tablespoon butter, one small teaspoon soda, one teaspoon salt, pepper to taste. Stew the tomatoes till tender. Mix the flour with enough of the milk to make a smooth paste, and boil the rest of the milk. Then add to the milk the flour, butter and seasoning, and when thickened remove from the fire, and strain into it the tomatoes. Bring it once more to a boil. Then add the soda and serve at once.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, July 30, 1902

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	72 1/4 @ 72 3/4	71 1/2 @ 72 1/4
Thursday.....	72 1/2 @ 72 3/4	71 3/4 @ 71 1/2
Friday.....	72 3/4 @ 71 1/2	71 1/4 @ 71
Saturday.....	72 @ 71	71 3/4 @ 70 3/4
Monday.....	71 1/2 @ 70 3/4	70 3/4 @ 70 1/2
Tuesday.....	70 @ 70 1/4	69 3/4 @ 70 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	33 1/2 @ 35	32 1/2 @ 35 1/4
Thursday.....	34 1/4 @ 34 1/2	32 1/2 @ 34 1/2
Friday.....	34 1/2 @ 33 1/2	32 1/2 @ 33 1/2
Saturday.....	34 1/2 @ 32 1/2	32 1/2 @ 31 1/2
Monday.....	33 @ 32 1/2	32 1/2 @ 31 1/2
Tuesday.....	31 1/2 @ 32 1/4	30 3/4 @ 31 1/2

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 14 1/4 @ 15	\$1 17 @ 16 1/2
Friday.....	1 14 1/4 @ 15	1 16 1/2 @ —
Saturday.....	1 14 1/4 @ 14 1/2	— @ —
Monday.....	1 14 1/4 @ 15	— @ —
Tuesday.....	1 14 1/4 @ 14 1/2	1 16 1/2 @ 17 1/2
Wednesday.....	1 13 1/2 @ 13 1/4	1 16 1/2 @ 16 1/4

WHEAT.

The speculative markets continue to bob upward and downward, but mainly downward the past week, although actual values in the open market have not inclined to any appreciable degree in favor of buyers. There has been no lack of inquiry for wheat, both here and in the interior, with considerable purchasing in the country at relatively better figures than were quotable here. One of the most encouraging features of the market is the display of so much firmness so early in the season, with wheat still largely in the hands of producers. If under existing conditions there were heavy holdings in the hands of shippers, millers and speculative operators, the market would now be booming. As is well known and is daily demonstrated, these buyers are not in the business for their health, and will do all they can to prevent the market from going up when they are carrying only small quantities of the goods and want to secure more. That they will be able to successfully bear the market and buy heavily at the same time does not appear likely this season, although they have accomplished such ends in times gone by. Wheat is still going outward very slowly, partly on account of only very limited quantities having thus far arrived at tidewater, and further due to the fact that cargoes are being quite stiffly held, foreign buyers finding the market against them. Ships are in fair supply and the freight market is not particularly firm. One ship was chartered for wheat to South Africa at 27s 6d, with United Kingdom option at 25s. Five others were added to the engaged list at rates varying from 26s 6d to 30s.

California Milling.....	1 17 1/4 @ 21 1/4
Cal. No. 1 shipping, alongside.....	1 13 1/2 @ 15
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 10 @ 12 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	6s 1d @ 6s 3d	6s 4 1/2 d @ 6s 5d
Freight rates.....	37 1/2 @ 40	25 @ 27 1/2 s
Local market.....	97 1/4 @ 1 00	1 13 1/2 @ 1 16 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.15 @ 1.13 1/2.
May, 1903, delivery, \$1.17 @ 1.16 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13 1/2 @ 1.13 1/2; May, 1903, \$1.16 1/2 @ 1.16 1/2.

FLOUR.

Business is of moderate proportions and is being transacted at much the same range of values as for some time past. Figures now current for flour in this center are low as compared with present cost of milling wheat, this being due to the competition between the local combine and the outside flours which are being offered here. Prices are lower, relatively, than at many of the outside points tributary to this market.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90

Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

There is no lack of inquiry for this cereal, and not likely to be for several months to come. The demand which is most urgent is for desirable brewing grades, wanted for shipment to Europe. Large lots of high grade barley are receiving the most attention and calling forth the most competition from buyers. There is a possibility that the export demand will not be so urgent later in the season, as shipments may not then arrive in time for the principal malting period in Great Britain and on the continent, but in some past seasons barley cargoes have been forwarded to Europe in almost every month of the year. Prices for feed descriptions are being fairly well maintained, more through the firmness of the market for export barley than of active or urgent demand on local account at present for common feed qualities.

Feed, No. 1 to choice.....	91 1/4 @ 93 1/4
Feed, fair to good.....	87 1/4 @ 91 1/4
Brewing, No. 1 to choice new.....	95 @ 97 1/2
Brewing, old.....	1 00 @ 1 05
Cbevalier, No. 1 to choice.....	— @ —
Cbevalier, poor to fair.....	— @ —

OATS.

Buyers are operating slowly, not being able to make very heavy purchases at prices to their suiting. Much of the oats coming forward have been grown on wheat or barley land and show some slight mixture of these other cereals. While just as good for feed as clean oats, they are not wanted for milling or for seed, and will not command as much money as clean oats.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 20 @ 1 22 1/2
White, poor to fair.....	1 10 @ 1 15
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 25 @ 1 30
Surprise, good to choice.....	1 17 1/2 @ 1 25
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 12 1/2

CORN.

Scarcely anything doing in a wholesale way in this cereal, and in small transfers from second hands there is no great amount of activity. Quotable values remain much as last noted, but represent at present little other than asking figures. There are no heavy spot stocks, but more than enough for the demand at present prices.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 42 1/2 @ 1 47 1/2
Small Yellow.....	1 45 @ 1 50

RYE.

It is understood there is some of this cereal going aboard ship for Belgium, but there is very little business locally. Quotable values are slightly higher than last noted.

Good to choice.....	85 @ 90
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BUCKWHEAT.

Nothing doing. There is an absence of offerings and no inquiry of consequence from millers or dealers. Values are wholly nominal.

Good to choice.....	1 55 @ 1 70
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BEANS.

Some speculative holders of white beans, who are rather heavily loaded for this time of year, are endeavoring to talk up prices so as to be able to clean up without incurring any losses. As most of these beans were bought on a tolerably stiff market, at a time when it looked as though there would be a dry season, the owners will be fortunate if they come out whole, as carrying charges and interest have since added considerable to first cost. Limas are being more firmly held, but trading at full current rates is confined to very light jobbing operations. Colored beans are not offering in heavy quantity, nor are they in brisk request at this date.

Peas, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 50 @ 2 65
Lady Washington.....	2 50 @ 2 65
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	2 90 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	3 00 @ 3 25
Limas, good to choice.....	3 80 @ 3 90
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

No improvement to note in the market for Green Dried, most of the local millers and handlers being well stocked with this description. There are no Niles Peas offering from first hands, market being virtually bare of domestic.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

The market is quiet, for the very substantial reason that there is very little stock left here upon which to operate,

and most of the unplaced wools are other than choice bright and free, the kind which operators are most anxious to secure. Quotations are unchanged, with market firm at prevailing figures for choice wools.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Footbill.....	11 @ 13
Oregon Valley, fine.....	15 @ 16
Oregon Valley, coarse to medium.....	13 @ 14
Eastern Oregon, choice.....	13 @ 15
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

The market in this center is quiet, with 1901 hops quoted at 20 @ 23c., and new to arrive held at equally stiff or still higher figures. The London market is quoted at £6 per cwt., equivalent to about 26c. The New York market for Pacific coast hops of last crop is quoted at 20 @ 23c. for fair to choice. A New York review says: "Business must necessarily be very light for the remainder of the season as the quantity of stock left in dealers' hands is exceedingly small. Only now and then is a lot offered on the open market, holders reserving the few that they have for regular customers or in the expectation that still higher prices will be obtained before the close of the season. Most of the brewers seem to be fairly supplied and are not being frightened into buying the balance of the stock in dealers' hands. In New York State the vines are now making better progress under favorable weather conditions, but much of the damage can never be recovered, and conservative operators are generally figuring on a yield of about 35,000 bales. Germany promises a big crop. The English yards have been infested with vermin, and if they remain until the hops are in the blow the damage may be serious."

HAY AND STRAW.

Arrivals and offerings of hay were not quite so heavy as preceding week, but there was enough to impart an easy tone to the market. Had it not been for free buying against future needs, current values would not have been sustained. The selling interest was favored materially by the high average quality of offerings. Straw was quiet, but steady, under rather light stocks.

NEW.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	5 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3/4 bale.....	40 @ 50

MILLSTUFFS.

The tendency has been to slightly easier figures on Bran and Middlings, owing to some increase in offerings, with demand slow at prevailing values. Market for Rolled Barley was firm at unchanged rates. Milled Corn was steadily held, but did not meet with much custom.

Bran, 3/4 ton.....	19 50 @ 20 50
Middlings.....	22 50 @ 24 50
Sports, Oregon.....	20 00 @ 22 00
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

Nothing new to record in this line. Very little trading in any of the varieties quoted herewith, most kinds being in too light stock to admit of any noteworthy business. Quotable values remain nominally as previously noted.

Flax.....	2 50 @ 2 75
Mustard, Yellow.....	3 50 @ 3 75
Mustard, Trieste.....	3 90 @ 3 60
Canary.....	3 1/2 @ 3 1/4
Rape.....	1 1/2 @ 1 1/4
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

The season's demand for Grain Bags has been about satisfied and stocks are by no means exhausted. Fruit Sacks are in fair request, with no changes to record in quotable rates. Wool Sacks are offering at unchanged figures, with movement light.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
San Quentin Bags, 3/4 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 38
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Current values for Hides are being well maintained on both wet salted and dry,

with good demand for shipment as well as on local account. Movement in Pelts is not particularly brisk, but prices are being maintained at previously quoted range. Tallow is bringing fully as good figures as for some time past, market being firm at the quotations.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/2 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/2 @ —	8 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 16 1/2	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 50 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 00 @ —
Salted Horse Hides, small.....	1 50 @ —	1 25 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	20 @ —
Pelts, medium, 3/4 skin.....	50 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	40 @ —
Pelts, shearing, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	— @ —
Tallow, No. 2.....	4 1/2 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

Stocks in this center are of light volume, both of Comb and Extracted, and are being in the main firmly held. Asking prices in most instances are above utmost figures warranted as wholesale quotations. Business at the higher figures asked is mainly of a jobbing character.

Extracted, White Liquid.....	5 @ —
Extracted, Light Amber.....	4 1/2 @ —
Extracted, Amber.....	4 1/4 @ —
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 11
Dark Comb.....	8 @ 9

BEESWAX.

Market is lightly stocked and firm, with no likelihood of there being any excess of offerings the current season.

Good to choice, light, 3/4 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Quotable values for Beef remain practically as last noted; demand is fair for this time of year and offerings not particularly heavy. Market for Mutton shows steadiness, although there is a sufficiency for immediate requirements. Veal and Lamb of desirable quality are not offering very freely and are selling to very fair advantage. Hogs continue in active request and are bringing good prices.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterer's profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3/4 lb.....	7 @ —
Beef, second quality.....	6 1/2 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wetters.....	8 @ 8 1/2
Hogs, bard grain fed, 125 to 250 lbs.....	6 1/2 @ 7
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 250 lbs.....	6 1/2 @ —
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	8 @ 8 1/2
Veal, small, 3/4 lb.....	8 @ 8 1/2
Veal, large, 3/4 lb.....	7 @ 8 1/2
Lamb, spring, 3/4 lb.....	9 @ 9 1/2

POULTRY.

Arrivals of domestic were not heavy, but considerable Eastern poultry was received, and this in connection with a somewhat limited demand, caused the market to incline most of the week in favor of buyers, especially on ordinary stock. Owing to warm weather, consumers did not take hold freely. Extra large and fat fowls did not lack for attention, however, such bringing an advance on quotations.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 3/4 lb.....	13 @ 14
Turkeys, alive, Gobblers, 3/4 lb.....	13 @ 14
Hens, California, 3/4 dozen.....	4 00 @ 5 50
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	4 50 @ 5 00
Fryers.....	3 50 @ 4 00
Broilers, large.....	2 75 @ 3 25
Broilers, small to medium.....	2 25 @ 2 50
Ducks, old, 3/4 dozen.....	2 50 @ 3 00
Ducks, young, 3/4 dozen.....	3 00 @ 4 00
Geese, 3/4 pair.....	1 25 @ —
Goslings, 3/4 pair.....	1 25 @ —
Pigeons, old, 3/4 dozen.....	1 50 @ 1 75
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Immediately following last review, prices for fresh butter were further

advanced, with sales in a small way up to 27c. for very favorite marks going to special custom. The higher figures caused a check in the demand, however, some buyers drawing on their cold storage supplies rather than pay the prices asked. The tone of the market at this date is not so buoyant as a week ago. Two carloads of Eastern lard butter were on the market, giving a better supply of cheap grades and an easier tone for same.

Creamery, extras, #10.....	25 @—
Creamery, firsts.....	24 @—
Dairy, select.....	23 @—
Dairy, firsts.....	22 @—
Dairy seconds.....	18 @20
Mixed store.....	18 1/2 @17 1/2

CHEESE.

There are no heavy offerings of any description and market is moderately firm, although at the prices now generally asked for domestic product, buyers in most instances are not purchasing to any great extent beyond immediate needs.

California, fancy flat, new.....	11 @—
California, good to choice.....	10 1/2 @—
California, fair to good.....	— @—
California, "Young Americas".....	11 @12

EGGS.

While there is no decline to record in quotable rates, there has been a temporary check to the upward movement in values. Although it is unusually early for the use of cold storage eggs, some retailers have already started in on ice-house supplies. Several carloads of Eastern seconds are announced to arrive in about a week, and these eggs will probably be jobbed out at 18@19c.

California, select, large, white and fresh.....	25 @—
California, select, irregular color & size.....	22 @24
California, good to choice store.....	20 @22

VEGETABLES.

Most kinds in season were in more than sufficient supply for the immediate demand. With the exception of choice Peas, which were in light receipt, the market displayed little or no firmness, and was especially weak for Tomatoes and Green Peppers. Prices for Cucumbers inclined slightly in favor of sellers. Onions were in increased supply and lower, despite very fair inquiry for this vegetable. Free shipments of Onions are expected to be made to Australia on the next two or three steamers.

Asparagus, #10 box.....	— @—
Beans, Lima, #10.....	3 @—
Beans, String, #10.....	2 @ 3
Beans, Wax, #10.....	2 1/2 @ 3 1/2
Cabbage, choice garden, #100 lbs.....	75 @—
Corn, Green, Alameda, #10 crate.....	1 00 @1 50
Corn, Green, #10 sack.....	50 @1 00
Cucumbers, #10 large box.....	35 @ 50
Egg Plant, #10 large box.....	75 @1 00
Garlic, #10.....	2 @ 2 1/2
Onions, Yellow Danver, #10 cental.....	60 @ 75
Onions, New Red, #10 cental.....	— @—
Okra, Green, #10 box.....	75 @1 00
Peas, Sweet garden, #10.....	3 @ 4
Peas, good to choice, #10 sack.....	— @—
Peppers, Green Chile, #10 box.....	30 @ 50
Peppers, Bell, #10 box.....	40 @ 75
Rhubarb, #10 box.....	— @—
Summer Squash, Bay, #10 large box.....	35 @ 50
Tomatoes, #10 small box.....	— @—
Tomatoes, River, #10 large box.....	30 @ 50

POTATOES.

There has been no material improvement in the potato market since last review. There was some decrease in receipts, but they continued larger than required to satisfy all shipping and local requirements. Especially was the market unfavorable to sellers for other than most select qualities.

Burhanks, Salinas, #10 cental.....	90 @ 1 15
River Burhanks, good to select, #10 cental.....	40 @ 1 00
Early Rose.....	40 @ 60
Garnet Chile.....	70 @ 80

The Fruit Market.

FRESH FRUITS.

The display of summer fruits was of quite fair proportions, but has been considerably heavier at corresponding date in some previous seasons. Apricots were not in particularly heavy receipt, and for strictly choice to select, both in free boxes and bulk, the market was moderately firm at prevailing rates. Choice Apricots were salable up to \$20 per ton, with some select going at an advance of about \$2.50 on above figures. On the other hand, some common white Apricots were not readily placed at \$10, and bids as low as \$5 were reported on soft white. Bartlett Peaches were in increased receipt, but offerings included a large percentage of windfalls, for which the market was weak and prices irregular. For some fancy Bartletts, wrapped and especially desirable for shipment, sales were made at \$1.25 per regular box in a limited way. Apples sold at much the same range as previously quoted, but only for select Gravenstein could the market be said to show firmness. Fine Gravenstein, wrapped, four tiers to the box, brought in a limited way on shipping orders \$1.40 per box. Peaches

were in fair receipt, including some early Crawfords, which were most in request and in a wholesale way were quotable up to \$20 per ton. Grapes were not in heavy supply and where of fine quality were salable to very fair advantage. Figs were in such light receipt as to be hardly quotable in a regular way. Nectarines put in an appearance, white and red, the latter being given this preference in fresh state. Watermelons were in quite fair supply and showed better average quality than earlier shipments. Cantaloupes were plentiful and sold at a wide range of prices, owing to great difference in size and quality of fruit and also in size of package. The berry market was in the main moderately firm for offerings in first-class condition, but considerable of this fruit was overripe and such had to go at low prices, and then was not eagerly sought after.

Apples, #10 fancy, 4-tier box.....	90 @ 1 15
Apples, good to choice, #10 50-lb. box.....	80 @ 90
Apples, common to fair, #10 50-lb. box.....	30 @ 50
Apricots, Royal, #10 crate.....	30 @ 50
Apricots, #10 ton.....	8 00 @ 20 00
Cantaloupes, #10 crate.....	1 00 @ 2 00
Cherries, Black, #10 box.....	40 @ 60
Crabapples, #10 small box.....	25 @ 40
Blackberries, #10 chest.....	2 0 @ 4 00
Raspberries, #10 chest.....	4 00 @ 7 00
Currents, #10 chest.....	4 00 @ 5 00
Figs, 1-layer box, 30@50c; 2-layer.....	60 @ 1 00
Grapes, Fontainbleu, #10 crate.....	50 @ 1 00
Grapes, Seedless, #10 crate.....	1 00 @ 1 50
Logan Berries, #10 chest.....	3 00 @ 5 00
Nectarines, Red, #10 box.....	50 @ 75
Nectarines, White, #10 box.....	30 @ 40
Nutmeg Melons, #10 crate.....	75 @ 1 25
Peaches, #10 box.....	25 @ 50
Peaches, #10 basket.....	20 @ 30
Peaches, in bulk, #10 ton.....	10 00 @ 20 00
Pears, Bartlett, No. 1, 40-lb. box.....	85 @ 1 00
Pears, small, 20-lb. box.....	35 @ 50
Plums, choice large, #10 box or crate.....	40 @ 50
Plums, Green Gage, #10 ton.....	10 00 @ 15 00
Plums, small, #10 box.....	25 @ 40
Prunes, Tragedy, #10 crate.....	30 @ 50
Strawberries, Longworth, #10 chest.....	6 00 @ 8 00
Strawberries, Melinda, #10 chest.....	3 00 @ 6 00
Watermelons, #10 doz.....	1 25 @ 3 00
Whortleberries, #10.....	8 @ 10

DRIED FRUITS.

Business in new Apricots is quite active, offerings being tolerably free and most of the wholesale dealers anxious to operate at current values. Large lots of desirable quality, ready for immediate shipment and convenient to some common shipping point, were especially in request. For choice Apricots in sacks 5 1/2c was the common bidding figure, some lots showing superior quality commanding an advance on above price, while fruit which would not average at least fairly choice had to go for less money to meet with prompt custom in a wholesale way. A few new Evaporated Apples have been commanding comparatively fancy figures in a light jobbing way, 10@11c, but these prices are not quotable and are not obtainable at this date in regular manner from either large or small dealers. Prominent wholesale handlers are bidding 8@8 1/2c for choice evaporated Apples, to be delivered at some common shipping point not later than August 10th. Peaches have not yet received any great attention. Dealers are talking 4 1/2c for early deliveries of choice at producing points, and it is stated that some have shorted the market at 4 1/2@5c. The Prune market is unsettled, with growers as a rule unwilling to accept the prices which have been lately current. Dealers have been eager to operate on their fixed basis of values, but it is reported that in consequence of the stiffer prices asked, several large handlers have entered into an agreement to temporarily withdraw from the market, hoping thereby to succeed in bringing growers to their terms. Bids were opened this week at Colusa on 600 tons new Prunes. The highest bid was 2 1/2c, less 5 per cent, but it did not secure the Prunes. All bids were rejected.

EVAPORATED OR BLEACHED.

Apples, 50-lb. boxes, rings, pressed, good to choice.....	— @—
Apricots, Royal, good to choice, #10.....	5 @ 6
Apricots, Royal, fancy.....	7 @ 7 1/2
Nectarines, #10.....	— @—
Peaches, unpeeled, choice.....	— @—
Peaches, peeled, in boxes.....	— @—
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2 1/2@3c; 50-60s, 4@4 1/2c; 60-70s, 3 1/2 @ 3 3/4c; 70-80s, 3 @ 3 1/2c; 80-90s, 2 1/2 @ 2 3/4c; 90-100s, 2c @ 2 1/2c; these figures for 1901 crop.	
COMMON SUN-DRIED.	
Apples, sliced.....	— @—
Apples, quartered.....	— @—
Peaches, unpeeled.....	— @—
Pears, prime halves.....	— @—
Plums, unpitted, #10.....	1 1/2 @ 2 1/2

RAISINS.

Last year's Raisins are practically out of the way, and in coming crop there are no evidences of anything of consequence at present doing. Growers and packers are apart in their views, with more firmness on the part of growers than a few weeks ago, but no corresponding improvement in packers' ideas of values. A combination of packers is said to be forming.

A few vineyards have been reported contracted for at 3 1/2@3 3/4c in the sweat boxes, but there are no signs of buyers being able to operate at these figures at this date.

CITRUS FRUITS.

Market has been exceedingly quiet. Oranges are out of the race at present, and this will continue to be the case until coming crop begins to put in an appearance. There has been no scarcity of Lemons or Limes, and although weather was warm and favorable for consumers taking hold freely, prices continued at the same rather low range previously quoted.

Lemons—California, select, #10 box.....	3 00 @—
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Grape Fruit, #10 box.....	2 00 @ 2 50
Limes—Mexican, #10 box.....	4 00 @ 4 50

NUTS.

A considerable portion of the coming crop has been contracted for at 7 1/2@11c, as to variety, with the Hatch varieties going at 10@11c, the latter figure for Nonpareils, although for this variety a higher price is now asked. In fact, the Almond market throughout is inclining against buyers. At a meeting of the Davisville Almond Growers' Association, held on the 26th, several bids were offered, the highest ranging from 7 1/2c per pound for Languedoc to 10 1/2c for Nonpareil. Owing to the Association's foreign and Eastern advices as to market and crop conditions, these prices were not deemed satisfactory, and all bids were rejected. New bids are advertised to open on August 9th. No prices for new crop Walnuts are announced, but market presents a healthy tone. For choice soft shell of last crop as high as 14c is being realized in a small way. Peanuts are in moderate receipt, with demand fair and market firm.

California Almonds, shelled.....	15 @18
California Almonds, paper shell, #10.....	12 @13
California Almonds, soft shell.....	9 @10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	11 @12
Cal. White Walnuts, No. 2 soft shell.....	9 @10
Cal. White Walnuts, No. 1 hard shell.....	9 @10
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 7

WINE.

Little doing at present in the way of transfers of wines from first hands. There are no great quantities offering at this date from growers, nor is the immediate demand active. Dry wines of last year's vintage are quotable at 20@25c per gallon, extreme figure being more in accord with asking prices than with buyers' views. Monday's Panama steamer carried 91,296 gallons and 55 cases wine, the major portion being for New York. Wholesale wine dealers quote San Joaquin valley grapes of present season as follows per ton: Choice black for sweet wine, \$16; Sultana and Burger, \$15; Malaga, \$14; second crop Muscat, \$12. Good to choice Napa and Sonoma grapes for dry wines are expected to range from \$20@24 per ton, with select up to \$25.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, #10 sacks.....	111,696	356,762
Wheat, centals.....	72,294	256,680
Barley, centals.....	114,774	201,033
Oats, centals.....	9,592	43,987
Corn, centals.....	2,840	5,349
Rye, centals.....	—	2,850
Beans, sacks.....	4,771	7,996
Potatoes, sacks.....	32,363	81,470
Onions, sacks.....	5,680	11,354
Hay, tons.....	5,278	13,611
Wool, hales.....	800	4,243
Hops, hales.....	1	5

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, #10 sacks.....	107,700	259,756
Wheat, centals.....	63,085	210,778
Barley, centals.....	85,200	104,205
Oats, centals.....	996	4,223
Corn, centals.....	1,021	3,454
Beans, sacks.....	634	1,200
Hay, hales.....	8,079	12,572
Wool, pounds.....	50,977	50,977
Hops, pounds.....	363	2,058
Honey, cases.....	28	51
Potatoes, pack's.....	1,312	4,028

California Dried Fruit at New York.

NEW YORK, July 30.—Evaporated apples, common, 8@10c; prime wire tray, 10 1/2@10 3/4c; choice, 11@11 1/2c; fancy, 11 1/2@12c. California Dried Fruits.—Not much doing in old stocks of which are light. Free offerings of new looked for soon, and buyers awaiting same. Prunes, 3 1/2@4 1/2c. Apricots, boxed, 10 1/2@14c; hags, 10@12c. Peaches, unpeeled, 8 1/2@10 1/2c; peeled, 12@16c.



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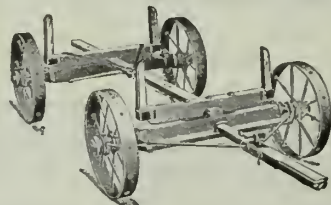


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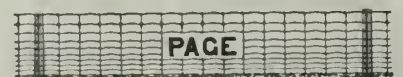
They are to the wooden fruit prop what the clothespin is to the clothesline. They grasp the prop by the prong points and form a crutch that holds the limb firmly but as gently as if held by hand.

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PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

ON THE ROAD.

In Kings and Tulare Counties.

[BY OUR TRAVELING CORRESPONDENT.]

Hanford is a pretty town. Its private and public buildings are large, new and handsome. The architectural style is strictly up-to-date.

Co-OPERATIVE CREAMERY, ETC.—Nearly \$10,000 has been subscribed in Kings county for one, to be located probably at Hanford. The creamery recently started at Dinuba is now receiving 4000 pounds of milk daily. James Stewart's dairy house near Tulare recently burned; loss, \$400.

IN THE PACKING HOUSES.—The Armsby Co. have made about \$500 worth of minor improvements in their house at Hanford. Mr. D. D. Hoag is in charge again this year.

The North Ontario Packing Co., different from most companies, puts up apricots for the trade only in two grades of size of fruit, known by their brand names. T. B. Thompson is again in charge for them. They are among those who process apricots.

The Hanford cannery of the Association will not run this year. Mr. O. A. Simpson is in charge of the plant. The fruit bought around Hanford will be shipped to the Association cannery at Visalia. In explanation of this change, the Association's local representative says it is required by the desire for economy in operation, and one of the local papers in Hanford is the vehicle for the explanation that it is due to too much friction between the management of the cannery and the people. The people of Hanford contributed \$8000 toward the building of the cannery.

The Essign packing house, Rosenberg Bros. of San Francisco operators, has been rendered more fireproof by the enclosing of the engine in a two-story brick structure, inside the packing house.

The improved sulphuring device, designed and first applied in Hanford last year, has this year been applied to the J. K. Armsby & Co. and Chas. Downing packing houses in Armona. It is further described elsewhere. In addition to this improvement, involving a new structure 35x52 feet on the ground, the Armsby house has undergone an entire rearrangement inside, by which all the packing departments have been brought together in one room. The grader has been moved up stairs and a new elevator, shaker, etc., and two new boilers put in. The total cost of the improvements is reported as close to \$3000. L. S. Smith, formerly in the orange trade in southern California, has charge of the house and business at this point.

The Chas. Downing green fruit shipping house, for whom Porter Bros. Co. are selling agents, has been working day and night for several weeks on plums, getting off an average of about a car and a half a day. It is the only house in Kings county doing green fruit packing and shipping. While Mr. Downing's Bartlett pear trees have suffered so severely from the blight that he will ship practically no Bartlett pears this year, and perhaps not more than one-tenth as many pears in all as heretofore, yet he reports that his output of late pears will be about equal to that of last year, the blight having but little, if any, effect on the trees of that kind. The shipments from Mr. Downing's Armona house are mainly straight cars of raisins and assorted cars of other fruits. This house has had considerable improvements made to it this season, among other things a 30x30 sulphur house of the improved Hanford style and a Draper elevator.

Castle Bros.—John Worswick, last year with Armsby & Co., in charge—are operating on apricots and other dried fruits in the warehouse next to Armsby's.

B. L. Barney, the Hanford grocer, got a good share of the apricots taken in at Armona this year, and good stock.

LEMOORE.—At Lemoore Seropion Bros. of Fresno are turning the Brownstone warehouse into a fruit packing

house, putting in an engine, prune grader, raisin stemmer, etc., to handle all kinds of fruit. They obtained the warehouse on very reasonable terms by the assistance of the Lemoore Chamber of Commerce, and talk of putting up a building of their own next year. Eugene Slawson is in charge of the establishment.

Joseph Marriott of Lemoore claims the first prize for a wine grape crop of two tons, apparently, to the acre on vines planted a year ago last spring, and grown without irrigation.

The most noticeable improvement at Lemoore is the new winery being put up for the Italian-Swiss Colony Co. by Mr. J. B. Biller of San Francisco, the machinery being furnished by W. H. Birch of San Francisco. The building is of wood, reached by the railroad with a spur track of considerable length. The distilling room is 65x65 feet and the fermenting room 55x30 feet. There is room for a double row of tanks. The winery will have a must pump, copper still, concrete tanks, and will be up to date in all its appointments. The cost will be between \$40,000 and \$50,000. Only brandy will be made this year, and it will be ready for this season's crop. There are now said to be 250 acres of wine grape vineyards in bearing near Lemoore, and a disposition among the people to greatly extend the acreage.

NEW CANAL.—Subscriptions are being received with a view to the formation of a corporation to build a canal from Kings river via Cross creek to the more southerly lands uncovered by the recession of Tulare lake in recent years. The completion of the project would open up to settlement a large tract of country well adapted to alfalfa and cattle raising, the principal drawback against the settlement of which is the possibility of occasional temporary overflow.

EFFECTS OF NEWS.—The effect of the publication of the prune news from France and elsewhere in Europe has been to rather stiffen up the views of growers and others outside the trade in the Visalia district as to prices of prunes in the district.

DRIED PEACH OUTPUT.—There are various indications that the output of dried peaches from Visalia district will be largely increased this year. M. J. Rouse, local manager for the Armsby Co., who has the Fleming Fruit Co. orchard under lease, will dry all the peaches on it—about 3000 tons of green fruit.

At Tulare, Seropian Bros. are well fixed in a good portion of the substantial and handsome Santa Fe depot and are doing a good business. They are not grading the apricot intake, but will grade the prunes taken in there. They will also handle peaches and raisins. N. H. Snogran, formerly in other business at Visalia, has charge.

Tulare fruit raisers have been a little "down in the mouth" for some years because of the heavy expense, litigation and disappointment attendant upon the formation of an irrigation district, under the Wright law, and the subsequent inability to get water enough to make the expense profitable. So orcharding has rather decreased than increased there. But there is prospect that a settlement will be arrived at soon in which all indebtedness and trouble as to bonds will be removed upon payment of \$250,000. Then Tulare people will take new heart and go forward again.

The Armsby Co. have a house of their own and are represented by L. A. Moore, an old-timer in the fruit buying business in central California.

At Visalia, the Downing Fruit Co.,

How's This?

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Props., Toledo, O. We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions, and financially able to carry out any obligations made by their firm.

WEST & TRAU, Wholesale Druggists, Toledo, O. WARDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price 75c. per bottle. Sold by all Druggists.

Hall's Family Pills are the best.

Chas. Downing and Jerry Motheral, by raising the roof of the present building, is putting in a second floor, 70x160. A sulphur room of the Hanford pattern, 35x35 feet, and a shook storing and box making room of the same dimensions have been added at one end. The whole building was moved the width of the building to permit of the putting in of a spur track from the S. P. R. R., and a loading shed. A big rotary prune dipper, vertical elevator, 110 H. P. boiler, with 35 H. P. engine, are also being put in. They are moving 100 carloads of peaches and apricots, mostly peaches, and expect to move about 200 cars of prunes. Most of the output from this house is in straight car lots. Mr. Motheral has charge.

Fleming & Jacob are putting a 60x70 two-story and a half addition to their packing house, with a considerable addition of machinery. A Stebler fruit brusher will be operated.

The amount of green fruit going out from the Earl Fruit Co.'s packing house is about the same as last year, speaking with reference to probable total output. The house will be used by Castle Bros. for dried fruit as last year, after the green pack is out of the way. Two weeks ago J. C. Chase, southern California manager, Thos. O'Neill, treasurer of the company, and P. M. Baier, in charge of the green fruit work at Visalia, made a three-days trip through the orange groves in this part of the State, and according to Mr. Baier they found the condition of the crop equal to that of last year, but the quantity one-third less. They estimate that the crop of last year, including express shipments and Valencia Lates, totaled over 1000 cars, but that this year it will not go over 700 cars, as a natural result of the previously large crop.

There have been some internal changes made in the Armsby & Co. house by which the storage capacity is largely increased. M. J. Rouse is in charge as usual.

The new addition to the Association cannery is finished and ready for business, which was scheduled to begin last Tuesday, with Leo W. Richter as superintendent and J. L. Wilder as head bookkeeper and outside man. All the old building, 48x264 feet, is to be used this season for storage room. The operating department, now in the new room, is 60x264 feet. Outside of this are the fruit receiving, can storage, syrup and engine rooms, in this order from front to back on one side of the operating room, each having a width of 35 feet. The engine is an Atlas, oil burner, of 90 H. P., fed from a 1200-gallon tank. It is generally understood that this cannery will not pack pears this year, and very few more freestone peaches than have already been contracted for it. It is said by parties outside the trade, yet whose business it is to be well informed, that the Association canneries in other parts of the State will likely be so well supplied with peaches from their own sections that but little if any shipments of that fruit will be made to them from this place, which is expected to lead naturally to the confining of the pack in this section largely to clings. Some improvements will be made in processing this year. The fruit will be washed before being handled by the cutters. The fruit will be cooked by the endless chain arrangement, now becoming common, in two hot baths and a cold one; and the sugar will be carried to the syrup cans with an elevator instead of by hand.

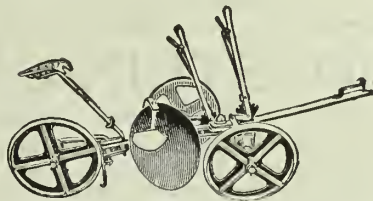
MT. WHITNEY POWER CO.—The company is erecting a new power house, close to the present one. Water will be used from the middle fork of the Kaweah river, with a fall of 365 feet. The new power will use the same lines as at present, and, so far as possible, the same substations by increase of machinery. Orders for equipment will be placed during the first half of August. The consulting engineer has been East to look over the works of Eastern manufacturers, and see all the new things to be seen. The load is and will be principally for pumping for irrigation. The buyer for the company expects to go to San Francisco about

the 5th of August, and the orders for machinery will probably be placed there. A new brick substation is being erected at Lindsay, and the company is having dams constructed at the lakes near Mineral King in which to store water for the low water season.

LOCAL CO-OPERATION.—It is predicted by usually well informed local parties that, now that it has been decided to wind up the California Cured Fruit Association, a local co-operative association will be organized in Visalia, possibly to co-operate with other like associations organized at San Jose, Colusa and other points.

VISALIA'S PROSPECTIVE CANNERY.—W. J. Hotchkiss of the Central California Canneries is said to have gotten 60% of the stock of the Visalia Fruit & Land Co., 80% of that of the Fleming Fruit Co. (organized by the J. K. Armsby Co.), and to be reaching after and possibly by this time have gotten control of the Mineral King Co., preparatory to opening a cannery at Visalia a year or two from now.

The thrust of a lance does not hurt more than the abdominal pains following the eating of improper food. Quick relief comes with the use of Perry Davis' Painkiller. Always keep it in the house.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

THE "BOSS" TREE PROTECTOR.

Made of Yucca Palm.

Is cheap, durable, and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

PRICES:

12 inches long,	\$ 9.00	per 1000.
14 "	" 10.00 "	" "
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WE PAY THE FREIGHT

Why buy in the East when we will deliver at your shipping station our EUREKA drop-head or closed cabinet Sewing Machines at less than one-third the agent's price? Remember, the EUREKA is the best that money and mechanical skill can produce, and our prices below all others.

WRITE FOR PARTICULARS

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FRANK DALTON CO.,
Shipping and Commission Merchants,
—DEALERS IN—

BEANS, POTATOES, GRAIN, DRIED FRUITS,
DECIDUOUS AND CITRUS FRUITS.

Car Lots a Specialty. Send Samples.
224 CLAY STREET, SAN FRANCISCO.

Sharples "Tubular" Dairy Separators.

If no agent will bring you a Sharples Separator we will loan you one for trial

FREE OF COST.

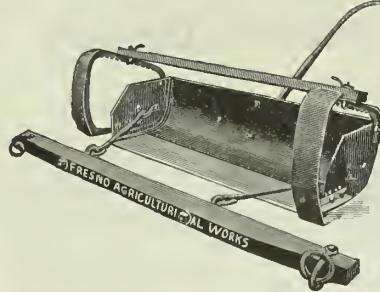
They give more butter than any other separator, enough to pay big interest on the whole first cost, and they turn much easier, besides being entirely simple, safe and durable. (Former capacity doubled, with less driving power.)

Improvements come fast here. We have been making superior separators for 19 years (longest in America) and are proud of them, but these new "Tubulars" discount anything either ourselves or anyone has ever made. Free Book, "Business Dairying," and Catalogue No. 131.

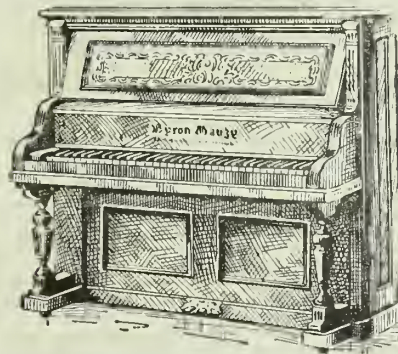
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3 1/2-4-5 Foot.



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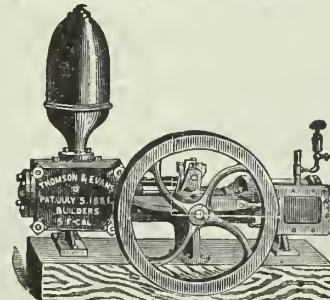
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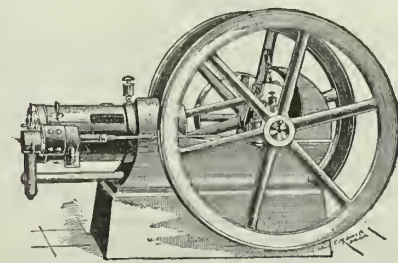


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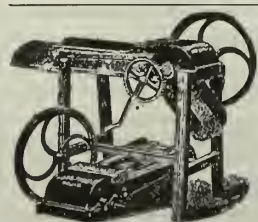


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With Elevators, Blowers, Powers, etc.

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Protect your calves against Black Leg with

BLACK-LEG-INE

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A SAFE PROP BRACKET.

The McIntyre Prop Bracket holds the limb on a broad surface, and it is self-adjusting when the limb is swayed by the wind. It will hold your limb as safely as though held by hand. Made of band steel, to last forever, and costs but 2 cents—a sample free if you mention Pacific Rural Press.

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Every Feeder, Breeder or Farmer should have it for every-day reference.

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FRUIT MARKETING.

Special Consular Reports on Foreign Fruit Crops.

Special Reports by the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

FRENCH WALNUTS.

My information from a Grenoble walnut dealer is as follows: "The crop of nuts has been badly damaged and we can only hope for a half crop."

Another informant writes as follows: "With respect to the coming crop of walnuts, we can only supply you with somewhat vague information. We ought to mention that the appearance of the crop so far is far from satisfactory, and we are receiving complaints from all sides. It is also very backward everywhere, and that is not reassuring for the quality of the nuts. There are few nuts formed as yet, but from what can be seen the crop will be well below the average. Moreover, the great heat that has suddenly set in may cause the fruit to fall. We have had, without doubt, most deplorable weather, and one can never say what is in reserve for us."

ROBERT P. SKINNER,
U. S. Consul.

Marseilles, France, July 3, 1902.

SMYRNA RAISINS.

We expect coming crop of Sultana raisins to prove a good average one—say 32,000 tons, against 23,000 last year. The stock of last year's crop of Sultanas is about 300 tons, consisting of rain-damaged and inferior quality fruit. All of this stock is in the hands of dealers. We expect an average crop of red raisins—say 11,000 tons, against 10,000 last year. No old stock left. We expect a good average crop of black raisins—say 16,000 tons, against 14,000 last year. The stock of about 200 tons is in growers' and dealers' hands.

RUFUS W. LANE,
U. S. Consul.

Smyrna, Turkey, June 3, 1902.

THE GREEK CURRANT OUTLOOK.

The prospects for the currant crop of the Peloponnesus and the islands adjacent are very favorable at this date. What changes may take place within two months before the vintage can not even be conjectured, although there is this to be said favorable to the crop, that the growers have learned the efficiency of sulphate of copper and the proper time to make use of it, so that ordinarily unfavorable conditions can be met without any appreciable loss either in quality or in quantity.

However, three facts must enter into every estimate of the crop in this district: 1. That the currant vines throughout this section are rarely, if ever, free from peronosporus. 2. That sulphate of copper has been proven effective against the disease, if taken in the early stages. 3. That all reports from currant growers must be taken with a grain of salt. To explain the last statement: Last year's crop was exceptionally large, and present prices are small. If this year's crop is equally as large the market must be found very active, or prices for the new fruit will open very low. Consequently it pays the grower of currants, who bears the brunt of low prices rather than the exporter, to train his view on the dark side, and to keep the market with him, until the last ton of fruit is gathered in. Forming an estimate with these points in view, there are no real present indications that the crop will fall below that of last year.

A few figures may be of interest. Gross shipments to the first of the present month (June) were 132,000 tons, of which amount 17,600 tons were sent to the United States. Deducting 10% for crating, etc., and adding 10,000 tons (the estimated supply on hand), the 12% of the entire crop retained by the Currant Bank, and a few small shipments during the month, not included in the above figures, and the net crop of last year must reach, approximately, 150,000 tons. The same figures may possibly be applied to the crop of this season, although the rate of retention will be higher in such an event,

probably 15%, and possibly 20%. The supply on hand will be considerably reduced during the month of July, so that the new season will open in August with a comparatively small supply of old fruit.

Prices last year opened at 20s per hundredweight c. & f. New York. They fell considerably by September 15 and have continued to drop until to-day they hover about the 11s mark. Prices for the new crop will probably open low, at about 10s c. & f., and are likely to rise as the season advances. Transportation charges last year were 17s 6d and 18s per ton by direct boats to New York and Boston, and about 21s by transshipments. Rates to California and the Northwest were about 83s. For the coming season rates may be closer, in view of the more pronounced competition for the carrying trade.

FRANK W. JACKSON,
Patras, June 21, 1902. U. S. Consul.

Breeders' Directory.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr., and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

JERSEYS—First-class regist'd bulls for sale. Inquire C. L. Taylor, 218 Sansome St., San Francisco.

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JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

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BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A. J. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

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SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

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THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by

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THE STOCK YARD.

The State Fair of 1902.

The premium list for the California State Fair, which will be held Sept. 8th to 20th, is now ready and can be had by addressing Secretary Geo. W. Jackson, Sacramento. We desire to call attention to some of the changes made in the premium list, particularly to page 31, Class I, Shorthorns, open class, and to page 32, Class Ia, for State only. The American Shorthorn Breeders' Association will duplicate premiums in these classes; particulars are given in the premium list.

On pages 39 and 40 are the grand sweepstakes for all recognized standard dairy breeds. In regard to this class, this is the opinion of Prof. W. L. Carlyle, Professor of the Bureau of Animal Industry of the University of Wisconsin: "Such a class has long been established in the Iowa State Fair, and also was for a time at the Minnesota State Fair. In judging this class at the Iowa State Fair last year, I did not hear of any dissatisfaction with the judgment rendered, and I think it brought out one of the finest exhibits that was seen in the whole dairy department of the fair. It gives the judge an excellent opportunity for calling attention to the fact that good dairy animals are found in all the breeds, and that no one of them has a right to claim superiority over the others, and that much more is dependent upon the individual animal than upon the breed to which it may belong."

The directors of our State society are very desirous of having a large exhibit of all classes of livestock and have secured Prof. W. L. Carlyle, a national authority, to judge them, and we think it timely to repeat what we said in the PACIFIC RURAL PRESS of May 31:

The livestock displays at the California State Fair next September should receive the careful attention of all interested in those lines. The educational value of having such an expert as Prof. Carlyle pass upon our local animals can hardly be overestimated. He can be trusted to bring to us up-to-date standards from that part of the country where perhaps higher ideals prevail than elsewhere, and where such ideals have been most nearly approached. To have a premium at his hand will be a distinguished honor; but more valuable still it will be to actually know by sight what is the accepted type, and this advantage can be shared by all who will go to the fair and watch closely the judging as it proceeds. One of our oldest swine breeders said to us the other day: "I believe I am a good judge of swine, but I want to see how my judgment stands as compared with that of the best Eastern experts, who have reduced judging to a science." Prof. Carlyle's engagement should not only bring out a large display, but it should be used to its fullest advantage by hundreds of earnest people who want to be just right in their views.

We hope our breeders will all take hold and exhibit at the coming fair, and assist the society in making this the banner exposition in the livestock and poultry exhibits that has ever been held in California.

A Fortunate Arrangement.

We are glad to note that the valuable work of the late Thomas Meehan is to be continued and expanded by his old associates. The firm Thomas Meehan is now incorporated though the entire stock is held by the old members of the firm. They have established their wholesale department at Dresher-town, 18 miles out from Philadelphia, where they have 200 acres of fine nursery ground, which they have been planting and developing for the past eight years. On this place they have growing a large and complete assortment of nursery stock. The office will be in charge of Thomas B. Meehan.

In certain lands of a rather loamy nature—not adobe—E. F. Donnen-wirth, near Davisville, has found it a good plan to plow twice in preparation for a crop of grain, the second time turning under a growth of weeds, by which the soil is enriched and the good character of the grain crop maintained.

The Raisin Growing Area.

One of the questions involved in the matter of the organization of the raisin industry in this State, either by syndicate or co-operatively, for marketing purposes, is as to whether the industry is capable of much extension in area in this State.

As having some bearing on this, the following letter is of interest:

DEAR SIR:—I would say from my experience that this section of the Sacramento valley is very favorable for extensive raisin growing. My vineyard is now nine years old and is a fair sample of what this land will produce without irrigation. I have thirty-five acres of Muscatels and twenty-five of Sultanias and Thompson Seedless. The average per acre this season will be about one ton and a half of raisins. My raisins last year were pronounced by experts to be equal to any grown in the State.

There are at least 20,000 acres of land in this vicinity equally as good as mine for raisin culture; in fact, I consider the hill land preferable, as it is less subject to frosts. The value of land here ranges from \$30 to \$50 per acre.

Williams, July 20. J. W. BRIEN.

The Davisville Almond Scale.

TO THE EDITOR:—At a meeting of the Davisville Almond Growers' Association, held Saturday, July 26, several bids were offered, the highest ranging from 7½¢ for Languedoc to 10½¢ for Nonpareil. Owing to the Association's foreign and Eastern advices as to market and crop condition, these prices were not deemed satisfactory and all bids were rejected. New bids will be received, to be opened on Saturday, Aug. 9. J. W. ANDERSON, Secretary Davisville Almond Growers' Association.

PLENTY OF WORK FOR ALL HANDS.—Oroville Register: Teams are coming into Biggs from 4 o'clock in the morning until midnight, loaded with fruit. It is estimated that there are fully 2000 people now at work in the river orchards. The crop of fruit along the river is larger than ever before, and it is almost impossible to obtain the help required to handle the same. At the Hatch & Rock orchard they have been shipping a very large quantity of Tragedy prunes. Six wagons a day were hauling this fruit into Biggs for shipment. A hundred and fifty white men, women and girls and nearly 500 Japs were engaged at the lower place in handling the fruit, and about seventy at the upper place. The apricots have been finished and the work is now on apples and peaches. A great many men come and go, work a day or two and then quit and hunt for another job. The people are paid by piece work and the packers get from \$1.25 to \$2 a day for their labor. Pickers are employed by the day.

THIS WOMAN DEALS IN HOGS.—Petaluma Argus: There is a woman in Petaluma who has a head for business. She also has the required amount of nerve to use the brains Providence bestowed upon her. Her name is Mrs. M. Roselle and she hails from Ukiah. Mrs. Roselle came here about a month ago. She didn't come alone, yet she was not accompanied by man, woman nor child. She came on horseback and brought with her 400 head of hogs. Unaided, she drove the big herd of hogs all the way from Ukiah. She had the hogs and she wanted to market them. Like a sensible woman, she brought them to tide-water where hogs can be fattened cheaply and readily sold at remunerative prices. Last Thursday Mrs. Roselle sold the whole lot of porkers for a good round sum. On Friday she left for Suisun, where she will market a big band of sheep which she owns.

BIRDS DID A GOOD JOB.—Exeter Press: Britten Bros. of Three Rivers have a citrus nursery of some 12,000 or 14,000 thrifty trees, some 1200 of which had been budded at the time of the grasshopper invasion. The nursery, like some others, seemed to get in the way of a big band of hungry hoppers and Britten Bros. began to feel shaky regarding the prospect. But a turn in the wheel of fortune came in the nick of time to avert disaster. There was another visit from another big band—this time of blackbirds, with a few crows thrown in. Those blackbirds and crows seemed as glad to be there as the grasshoppers. They began busily eating up the hoppers at a rate that kept them out of the orchard. When the hoppers were cleaned up, the birds left as suddenly as they came.

J. D. MARTIN AND C. S. STEINBERG, near Woodland, a few miles north, are getting into the growing of garden truck, strawberries and cane berries to a considerable extent. The former has sixteen acres of strawberries, several of Loganberries, etc., while the latter does considerable in truck and berries.

Snakes, centipedes and other poisonous things may assail you in your walks through field and forest. Be sure to have a bottle of Perry Davis' Painkiller in the house and you run no risk. Directions on the wrapper.

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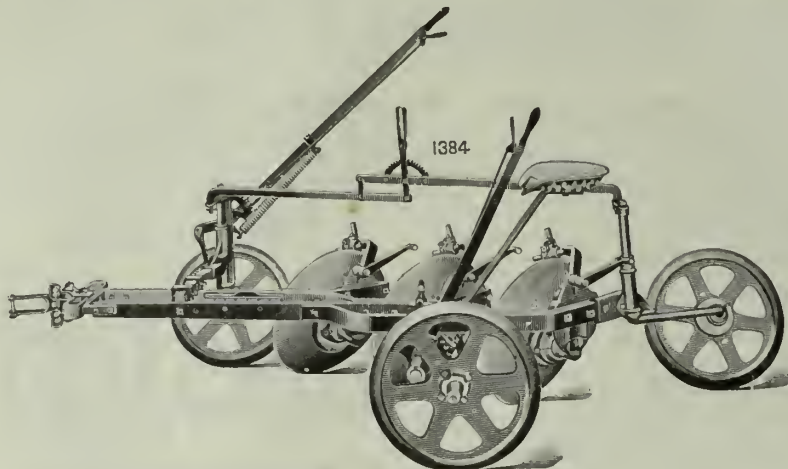
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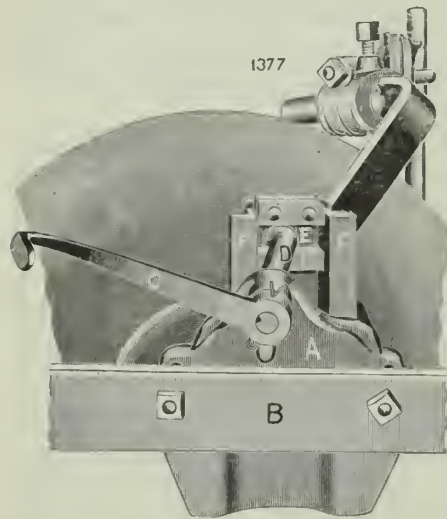
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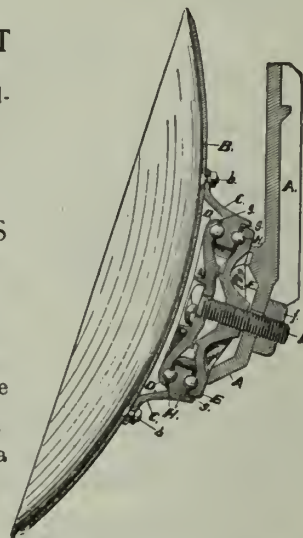
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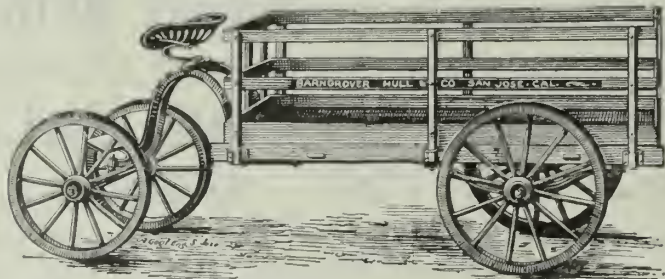
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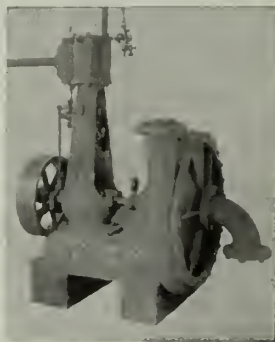


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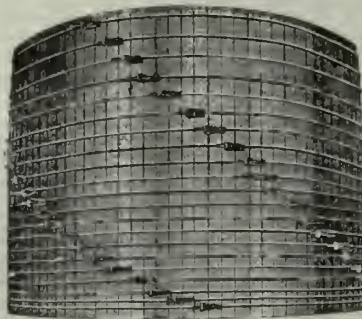
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 6.

SAN FRANCISCO, SATURDAY, AUGUST 9, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Midsummer Activity in the Mountains.

Midsummer brings the greatest activity to the valleys, and while our readers in such favored locations are working most strenuously for the gathering and marketing of their crops, they naturally forget that the mountains are also bustling with the peculiar forms of action and enterprise which befit them. The dilettante may think that the mountains were thrown up for the gratification of his esthetic gaze, but the industrialist who thinks and observes broadly, the scientist who looks deeply and the poet who muses profoundly all conclude, from their different points of

view, that the mountains are grandly significant in the welfare and prosperity of the race. Mountain activity is then a phase of life which touches humanity at many points, and it is seasonable to remind those who are held by their tastes or occupations to the sea-troughs of our habitable surface that along the crests of the intervening uplifts there are modes of life and undertakings, as well as visible forms of nature, which are as interesting and important as they are strange.

never so many valley people in the mountains as they are this year. All through the State, from Siskiyou to Kern, at least, the trails are full of pedestrians and pack animals, and the mountain resorts and stage lines are thronged to their fullest capacity. In the Yosemite it is said that twice the present accommodations could be used to advantage, and the newer regions along Kings and Kaweah rivers are being freely roamed over. The visit of about 300 people in a body to Kings River canyon, under the auspices of the Sierra Club, marks a new era in the popularity of the mountains among the people of the San Fran-

cisco bay cities, and shows that California city women can master long tramps and sleep in the open air in defiance of all sorts of creeping things. This is a form of outing which will do more to promote health and uplift the spirit than the verandas and ballrooms of fashionable resorts can accomplish. But our pictures are not along the line of mountain recreation. They show more earnest phases of mountain life. The packers in the first picture are evidently not in it for their health. They are bent upon some mission of development which may add much to the production of the region they visit. The log dwelling is also an earnest of some important undertaking which may cover the spot ere long with

more substantial structures. The same prophecy may befit the future of the outpost of civilization which Uncle Sam has placed upon his list of post-offices. The other picture shows how a mountain meadow may be seized upon as the site of a canvas city to meet the needs of a population which comes in a summer to determine whether the local resources warrant permanent investment. All these pictures represent mountain movements now in progress. They will, however, recall to many readers scenes amid which they themselves helped to lay the foundations of some of our most successful mountain towns and industries. All over the Pacific slope such oper-



On the Trail—Packed Ready to Start.



A Pioneer Rancher's Cabin in the Mountains.



New Settlement Which Has Secured a Postoffice.



The Foundation of a Mountain City

view, that the mountains are grandly significant in the welfare and prosperity of the race. Mountain activity is then a phase of life which touches humanity at many points, and it is seasonable to remind those who are held by their tastes or occupations to the sea-troughs of our habitable surface that along the crests of the intervening uplifts there are modes of life and undertakings, as well as visible forms of nature, which are as interesting and important as they are strange.

The mountain sketches on this page are suggestive of these things. They are such scenes as thousands of our valley and coast people are now actually enjoying, for it is an interesting fact that there were

cisco bay cities, and shows that California city women can master long tramps and sleep in the open air in defiance of all sorts of creeping things. This is a form of outing which will do more to promote health and uplift the spirit than the verandas and ballrooms of fashionable resorts can accomplish.

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ations are proceeding now more widely and rapidly than ever before, and the result will be the upbuilding of a Western empire the future of which can scarcely be overdrawn.

THE coyote scalp bounty claims suits which for weeks have drawn their weary lengths through the court at Sacramento are closed. The various claims presented for settlement aggregated about \$300,000, and were gone over carefully until exhausted. At the close the attorney for the State made a motion for a non-suit in each of the cases. The court took the matter under advisement and will render its decision at a later date.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, August 9, 1902.

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The Week.

The city is fast assuming a gala appearance, and the forerunners of the multitude are arriving. The expectation is of a grand crush—some say even 50,000 transients for the metropolis during the days from August 12 to 20. Unparalleled preparations are being made to declare welcome and to exhibit the unique character and the profusion of California productions and resources. The exposition of county products in the long galleries of the ferry building at the foot of Market street promises to be the greatest display of the kind ever made in the State, though there have been great ones before. We base the opinion upon the scale and character of the preliminary carpentry which is being erected—certainly some counties will surpass all their records in the extent and artistic features of their exhibits. We trust the material collected will befit the preparations for its display, and to this end all who are interested in making the State better known, either from patriotic motives or for industrial considerations, should see to it that their regions are adequately represented. It will be a greater opportunity than is likely to present itself for a number of years.

Wheat is being held down closely in the city while quite free buying is going on in the interior, and the local market is weak and dragging. Eastern centers have been depressed for wheat, but there is a glimmer of improvement as we go to press. One cargo of wheat has gone to Europe; another ship took half barley and half rye for Belgium and some barley has also gone to New York. Barley is rather easier for feed, while brewing and export barley holds firm. Other cereals are unchanged and little doing. Colored and Lima beans are somewhat higher while other kinds are practically unchanged. Bran, middlings and ground barley are lower. Hay is about the same; there is some buying in the country, but little arriving here on consignment. Beef and mutton are unchanged and hogs are reported both higher and lower than last week, so probably hogs also are steady. All butter, except the finest, is quiet and rather against the seller; some cold storage and some Eastern butter are working against the common grades. Cheese is holding up well. Eggs are quiet; a few choice bring firm figures, but Eastern warm weather eggs are against the common local product. Poultry is in poor stock and light demand. Potatoes and

onions are both moving in the Texas direction, but prices do not change, though the outlook is rather better. Receipts of fresh fruits are lighter and good fruit is in better tone though not higher. Apricots are going out and retailers pay more, though canners do not advance. Peaches are steady and jobbing better. Grapes are green and poor and go slowly. Plums are in heavy stock and only fancy sell well. Melons are in free receipt but sell readily. Berries are in lighter stock. Dried apricots are active and choice go at about the same figures as last week, though small fruit is being talked down. Dried peaches and pitted plums are in but prices not established yet. Dried early apples are selling at high rates. Prunes are stiffly held and buyers are bidding up, though they do not yet come to sellers' views. Old prunes are cleaning up and the market is stiff. There is a good movement in limes and lemons but no better prices. Almonds are waiting for the results of the Association sale on Saturday of this week. Honey is firm but only local business is done; comb honey is stiff. Hops are still being talked very high, but little selling is done.

The earthquake step of some of the great dailies is quite a novelty in locomotion. After adding to the fright of local people by exaggerated and sensational accounts of what was bad enough without such coloring, these molders of public opinion bethought themselves that thousands of Eastern people who were standing in line to buy California tickets might be frightened out of the August overland excursion if the midsummer earthquake were shaken at them. So these word painters began daubing whitewash over the deep black of their earlier masterpieces and charged the people in the earthquake corner of indulging in hysterics, etc., and that the affair was only a local episode. Now, if correct and temperate accounts had been given in the first place, what a saving of hard lying would have been effected. Within its narrow reach the earthquake was a genuine thing and distressing, though not a life was lost; but in nine hundred and ninety-nine thousandths of the State there was no quake at all. How much easier it would be to tell the truth, if some could only find out how to do it.

We recently began reading what promised to be an interesting letter on agricultural banks in Turkey in one of the consular reports, and were uplifted with the thought that we might learn something about governmental aid to agricultural development even from the unutterable Turk. This seemed likely when we found that in the last annual report of the agricultural banks, for the financial year ended March 13, 1899, the capital amounted to \$12,642,000, of which 84%, or \$10,619,355, was loaned to farmers; but, as we read farther it appeared that during the last year the banks loaned to 90,536 individual sums amounting to \$2,621,400—an average of only \$29 for each loan. We doubt if we have much to learn from Turkey after all, for this small loan business seems rather of the nature of pawnbroking than of loans for development. It may be a charitable affair in some aspects, but what could be said of a people where the average loan is so small. It is not in the class of development loans at all, though it may relieve distress.

The Sacramento fruit growers, who have established an agency of their own in this city, have brought a suit against a number of commission firms who are alleged to be combined to prevent trade by refusing to sell anything to retailers who buy at the Sacramento growers' house. This is an abomination which must be reduced in some way, and the Sacramento growers rightly propose to see what the law can do for them in a suit for damages. It is expected that the city receivers will work against growers' co-operative agencies, but they have no right to resort to disreputable methods of warfare, and should be made to abandon them.

The Prune Association proposes to divide \$30,000 among its members as the result of recent receipts of old sales, but the Association is still short of a quorum to enable it to hold its annual meeting. If it could be announced that those who had voted would first receive their share of the money it might bring in enough votes to enable the Association to decide at least whether it shall live or die.

QUERIES AND REPLIES.

Walnut Bacteriosis in Napa.

TO THE EDITOR:—I send three English walnuts in different stages of some kind of disease. I find that walnuts are thus affected in different parts of this country, in both mountain and valley. The soil in all places within my knowledge is, perhaps, the poorest in the valley—gravelly, good for grapes. Has this any bearing on the subject? What is the matter and remedy?—READER, St. Helena.

The samples show the bacterial disease of the walnut to which we have often alluded and which is becoming rather serious and quite widely spread throughout the State. It is found here and there wherever walnut trees are grown. It is a bacterial disease, and from the fact that its growth is largely in the interior tissues of the plant it is very difficult to reach it with any external application. Spraying with the Bordeaux mixture early in the season, before any of the spots appear upon the walnuts, has been done to some extent and seems to have reduced the trouble, but enough experience with this treatment has not yet been had to confidently recommend it. No other propositions for treatment have yet been made. Prof. Newton B. Pierce of Santa Ana, the Government expert on plant diseases, is conducting experiments with the use of different kinds of sprays, and has rather more reason to think that the disease can be controlled by spraying. He is not ready, however, to make announcement of his results until he has repeated evidence of their satisfactory character. This is the way the matter stands at present. There is nothing to do but to wait until systematic experimentation now in progress shall demonstrate a satisfactory treatment.

A Trouble of a Fine Black Oak.

TO THE EDITOR:—I send you specimen leaves of a much afflicted black oak tree on the Mills-Waterhouse ranch, adjoining my home at Three Oaks. Can you tell me what ails the leaves? It would require immense effort to cure the tree, if there be any other remedy than time and change of season. I am glad, however, to introduce you and your readers to this great tree. It is the admiration of the region; visitors take off their hats to it. Dr. David Starr Jordan thinks it is the finest black oak in California. It is 100 feet high. Its spread of branches is 90 feet. It is as symmetrical as an umbrella tree of the best pattern. A hundred guests play games under it on holiday occasions. It looks of scant foliage now, but it is a tree of great beauty in its ordinary dress and one of the attractions of this charming region.—EDWIN S. WILLIAMS, Saratoga.

It is not easy to tell from the specimens the causes of injury to the foliage. The roundish swellings which appear roughly convex on the under surface of the leaves and concave on the upper surface, look like the work of a phytopus—a genus of mites which form habitations in the leaf tissue, which is perverted by their burrowing. Afterwards, when the affected tissue dies, the mites can not be found; they are only found in the earlier stages of the ruin they work, and must be looked for earlier in the season as soon as the spots are discernible, and not when they become dead spots, as in these specimens. It is not likely that the tree will be killed. Our native oaks have struggled with their natural enemies for centuries, probably, and still survive. The subject should, however, be looked to and investigation made earlier next year.

Tree Problems.

TO THE EDITOR:—Several of our Italian chestnuts are turning yellow and one has died. They are old trees, about twelve years, and were planted as shade trees along the road. In my opinion it is sour sap from too much water this spring. Now, can I do anything that might save them? It seems a shame to lose such old shade trees. We have a variegated maple in our garden which seems anxious to turn into its original green color, the new shoots growing much faster than the variegated ones. I have cut them off repeatedly, but they always grow out again. Shall I continue to cut them off as they appear, or must I allow it to turn to its original form?—READER, Calistoga.

Cutting back early in the spring as soon as sour sap is noticed helps the tree by reducing the strain upon its weakened root system and helping the latter to strengthen itself. Cutting back now would not act in that way, but would take from the roots whatever service the foliage has been able to prepare. We should give the trees water now, if it is feasible, to help them maintain activity later in the season and, to stimulate growth next summer, would winter

prune. This comment is based upon the hypothesis that the trees are suffering from standing water last spring. Our observation is that the chestnut is not very liable to injury in that way.

The variegated part of the tree must be secured by cutting away everything which shows reversion to the old type. This part may be forced in this way and in no other known to us. It may not be worth the trouble.

Dwarf Essex Rape.

To THE EDITOR:—To what extent has Dwarf Essex rape been cultivated at the University stations? Has your experience been that it is better to sow it in fall or spring in California?—J. L. McNAB, Mendocino county.

The Dwarf Essex rape has been successfully grown at the University stations in the interior valleys, and we find that it is a satisfactory winter grower under California valley conditions. The weed, which is in some parts of the State known as the wild radish, is really of the same botanical species as the rape, except that the wild radish is narrow leaved and the rape wide leaved. Now, wherever you find the wild radish growing well in the winter you can expect the Essex rape also to do well. The summer growth of the plant is directly conditioned upon the amount of moisture present. It does not enjoy either high heat or severe drouth, and its growth may be expected to dwindle and become ill-flavored as the dry season advances; consequently, unless you can count upon pretty late summer moisture, it would be unwise to plant in spring. Fall planting would be the proper method under most California conditions. We should like to hear from readers of their experience with the growth and feeding value of this plant.

Black Scale and Shot-Hole.

To THE EDITOR:—I send you a small package of apricots from our orchard showing a very diseased condition. Our entire crop is not thus effected and the disease confined mostly to one location. The trees were carefully pruned last winter and subsequently sprayed with distillate emulsion, the trees fertilized by a moderate application of barnyard manure and commercial fertilizer carrying quite a large percentage of phosphoric acid and potash, the whole orchard carefully plowed to a depth of about 8 inches and left in this condition until most of the rains of the past season had fallen, and then carefully harrowed and cultivated. We are at a loss to understand the cause of this diseased condition of the fruit.—GROWER, Orange county.

You have two serious things the matter with your apricot trees. One is the black scale, which is indirectly concerned in the occurrence of the smut on the leaves and on the fruit, which makes the latter undesirable for commercial purposes. You have also the shot-hole fungus, which causes the little round pustules upon the skin of the fruit. These are naturally of a reddish-brown color, but are blackened by the occurrence of the smut. It is impossible to produce handsome merchantable apricots with either the shot-hole fungus or the scale present on the trees. The scale can be destroyed by the proper use of distillate sprays. Perhaps you used the emulsion too late in the season last year. The shot-hole fungus must be treated by winter spraying with Bordeaux mixture so as to kill all spores which may be going through the winter on the bark, and then while the fruit is still small in the spring there should be another spraying with the Bordeaux mixture to destroy spores which may float in after the growth has commenced. Your treatment of the trees is exemplary in the way of cultivation and fertilizing, but they must be protected from parasitic enemies.

Alfalfa Irrigation in Nevada.

To THE EDITOR:—Will you kindly inform me how many acres of alfalfa, more or less, can be irrigated by a stream carrying 500 miners' inches of water? I do not know the nature of the soil, but it is located on the Humboldt desert, near Lovelocks, Nev., where more or less irrigation has been practiced for several years back.—READER, San Francisco.

The estimate of requirements of water for alfalfa in the part of Nevada you indicate is 1 inch to the acre for the first year; that is, 500 miners' inches of water running during the short season in which they have water in Nevada could be expected to support 500 acres of alfalfa, but experience seems to indicate also that after the land is once well soaked 1 inch of water would carry two or even more acres of alfalfa, so that you might count on 500 inches carrying, per-

haps, 1000 acres of land for the first year. This seems a frightful amount of water—1 inch to two acres—when in California land has been sold at the rate of 1 inch to 10 acres; but it is pretty well shown by California experience that 1 inch to 10 acres is not enough, and also that when we speak of 1 inch to 10 acres we mean 1 inch continuous flow, while in Nevada the flow only holds for the short run of two or three months, during which there is water from smelting snow. Considering this difference, the discrepancy does not seem so great.

Poison Plants in the San Joaquin Swamps.

To THE EDITOR:—I send you a plant which we think may be poisonous to stock. It is known here as milk weed. Please let me know if it is poisonous and if there is an antidote. We have lost several head of cattle lately by some kind of poison. The cattle have the run of a mile of swamp along the river. Do you know of any other poisonous plant liable to grow here?—READER, Bethany.

The plant is Indian hemp (*Apocynum cannabinum*). Like the milk weed this plant is poisonous to stock, but it is seldom eaten by them on account of its acrid, milky juice. It is extremely doubtful if stock will touch it when there is a moderate supply of other food. The antidote is an emetic such as soda in water. It is also well to compel the animal to swallow considerable grease by rubbing its mouth well with lard.

Other plants which might be found in your locality are poison hemlock (*Conium maculatum*), a tall branching biennial of the Umbelliferae, with small white flowers in umbels and decomposed leaves. The herbage has a disagreeable odor. Another is water hemlock (*Cicuta bolanderi*), a similar plant, but with larger and serrate leaflets. There are also milk weeds (*Asclepias*) of several species. These resemble the Indian hemp in possessing a bitter, milky juice, but are usually more robust, and are clothed with densely matted, woolly hairs.

Pine Land for Entry.

To THE EDITOR:—Are there any pine lands subject to homestead entry in the northern part of your State?—READER, Rhinelander, Wis.

We believe there are, judging from the reports which are frequently published of efforts to get possession of timber lands by collecting dummy entries and assignments. The way to get such land is to find it and then ascertain through the nearest land office whether it is still open to entry. We understand that the land offices do not undertake to find the land, but that burden rests upon the settler.

Vinehoppers.

To THE EDITOR:—I send sample of grape vine leaves which appear to be the home of a fly or bug; a sample of them I also send. The leaves turn white and then dry; they appear to affect the Thompson Seedless the worst. What are they? What are they good for? Is there any way to induce them to leave?—G. M. BUTTERFIELD, San Benito county.

You have the vinehopper which we have discussed from time to time. Spraying with insecticides is of little account, because of the difficulty of reaching the insect with the spray, from the fact that they move so rapidly when disturbed. Spraying with Paris green would be useless, because the insect does not bite holes in the leaf and consequently could not be poisoned by the Paris green. The vinehoppers are sucking insects and extract the sap from the interior of the leaf substance and are not injured by deposits of poisonous substance made upon the outside of the leaf. It must be acknowledged that these insects are among the most baffling which we have to deal with. There are two kinds—one is larger than the other and when disturbed drops to the ground. These are handled with some success by using shallow pans, half circle in form, so that the two when placed together are about 3 feet in diameter. These pans are about 2 inches deep and are partly filled with water upon which there is a small amount of kerosene oil floating. One man operates each of these half-circular pans. They come together carefully one on each side of the vine, so that the insect is not disturbed until the two pans are in place under the vine, which is shaken and the insects then drop freely into the kerosene. In this way large quantities of the insects are captured in the region about Florin and this seems to be about the only

feasible method, and this is the species usually found in the coast valleys. The other vinehopper is smaller and is the one which chiefly occurs in the Fresno district. When the vine is disturbed these insects do not drop, but rise and the air becomes filled with them. With this species the pans are of no great use. There is no satisfactory treatment. Fortunately they are very much reduced by their own enemies or by unfavorable weather conditions, because many times in Fresno when in the early spring it seems as though vines would be utterly destroyed by the hoppers, the hoppers themselves are destroyed in some way and the vines are saved.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 4, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been considerably cooler than during the preceding week. Grain harvesting and threshing are progressing rapidly. Wheat, barley and oats are yielding good crops in all sections. The extreme heat of the preceding week caused considerable injury to grapes and prunes in portions of Yuba and Sutter counties. Apricot drying is nearly completed. Peaches and pears are of excellent quality and the yield is heavy. Early grapes are in market. Prospects are still good for a heavy crop of grapes. Labor is very scarce and much fruit will probably be lost. Field and forest fires have caused some damage.

COAST AND BAY SECTIONS.

Cooler weather during the week, with fogs along the coast, has been favorable for all crops. Grain harvest is progressing and in many places the yield is better than expected. Beans are doing well and an average crop is probable. Hops are making rapid growth and give indications of a heavy yield. Sugar beet factories are in operation and it is reported the crop is unusually heavy in some sections. Grapes continue in excellent condition and were not seriously damaged by heat during the preceding week. Fruit drying and canning are progressing. There is a scarcity of labor in orchards.

SAN JOAQUIN VALLEY.

Clear weather has prevailed during the week and the temperature has been nearly normal. Conditions have been very favorable for grain harvest and fruit drying. All varieties of deciduous fruits are ripening rapidly and with the exception of pears are yielding heavy crops. The grape crop will be unusually heavy. Some damage was done to early table grapes by the heat of the preceding week. Melons in large quantities are going to market. Citrus fruits are doing well. Grain harvest is nearly completed in some places. The yield is heavy except in the south. Sweet potatoes are maturing. Corn is making good growth. Hay baling is progressing. Hay is of excellent quality, but the yield is below average in some sections.

SOUTHERN CALIFORNIA.

Warm weather has continued during the week, but with cool nights and fog along the coast. The heavy rainfall of last week in the vicinity of San Diego was beneficial to corn and vineyards, and it is predicted the grape crop will be one-third heavier as a result. The deciduous fruit crop is insufficient to supply the local markets. Grapes are in excellent condition in all sections and will probably yield heavily. Walnuts are thrifty and give promise of an average crop. Oranges and lemons are in good condition. The sugar beet crop at Anaheim is light. Corn and beans are doing well.

LOS ANGELES SUMMARY.—The warm weather at the close of the week was favorable for fruit ripening and drying. Apricot cutting completed in some sections. Walnuts are doing well and lemon trees have a fine crop of young fruit.

EUREKA SUMMARY.—Very warm in the interior. Pastures on the high lands are turning brown. In the valleys hay is cut and secured. Wheat and barley are being harvested. Apples and prunes are abundant.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 6, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	.23	.03	.13	.70	52	
Red Bluff.....	.00	.00	.03	110	60	
Sacramento.....	.00	.00	.02	100	56	
San Francisco.....	.00	.00	.02	72	52	
Fresno.....	.00	.00	.02	108	58	
Independence.....	.16	.31	.03	100	68	
San Luis Obispo.....	.00	.18	.01	88	50	
Los Angeles.....	.00	.09	.02	94	58	
San Diego.....	.90	.00	.02	80	62	
Yuma.....	.11	.08	.26	110	78	

CEREAL CROPS.

The Wheat Growers' Effort.

TO THE EDITOR:—No doubt many grain growers of California have wondered why the Grain Growers' Association has not been more in evidence than it has been during the last few weeks. Some perhaps have gotten quite out of patience because we neither shipped grain nor floated literature. The time has now come when we are ready to answer for our silence. In a few words we will tell you why we did not actively engage in shipping grain.

Early in the season some shrewd business men sized up the exporting business and decided that there was money in it this year. What part the work of our Association played in throwing light upon the formerly mysterious business of grain shipping will be left for you to conjecture. When you recall the fact that at the time of its inception freights were above the 40-shilling mark, and that within three months from that time they were below 30 shillings, you will at least agree that the formation of the Association was not a detriment to the farmer. If some say that other influences wrought the change, we answer that it was a strange coincidence that these "influences" should have waited through these many years of trying times for the grain grower only to make themselves felt at the time the farmer began to assert himself and demand his rights.

We do not claim to have revolutionized the business, nor yet to have pushed anybody to the wall. We did, however, set on foot certain lines of investigation that have borne fruit, and to-day every grain grower in California is being benefited as a result of those investigations.

The work that we had in view when the organization was undertaken was to charter ships, load grain furnished by the growers, and sell the cargoes on the most advantageous terms. No fictitious values could then play a part in the transaction. The farmer would get all to which he was entitled. As we advanced in expertness by doing, we would save numerous commissions that are now charged against us. These, many times, would bridge the slough between profit and loss and save us many wadings that we have become accustomed to take.

Soon after our inquiries began we learned of the contemplated action of the independent grain buyers and exporters who are in the markets to-day. They proposed to do just what we had outlined as our plan of action. They were in the business, understood it, and had either capital or credit to carry the venture through a satisfactory test. It seemed the wiser plan to watch their movements, since our going into the field at that time would inject a disturbing element into the ranks of our friends. The success of these independent buyers brings to the farmer the same benefits that would accrue to him from the success of the Grain Growers' Association acting as an exporter. All this was to be realized without the expenditure of a dollar, the chartering of a ship, or the taking of a single business risk.

The independent local exporters, of whom there are more than a half dozen, and the English buyers who have come here to buy on their own account, are having a hand-to-hand fight with the grain kings of California. These independent buyers have chartered ships. To prevent them from securing cargoes with which to load these ships, the big grain manipulators have run up the local price of grain until there is but little margin left for profit for the exporter. All this, of course, pleases the farmer, since, for once at least, he is getting all his grain is worth under existing conditions of the foreign markets and present freight rates.

If the grain kings succeed in driving the independent buyers from the market prices will drop, and the farmer will be compelled to part with his produce at prices below its real value in order to make good the losses sustained by the exporters in the fight with the independent buyers.

Should that condition of things be realized, and we sincerely hope it will not be, there will be an opening—yes, a necessity—for the Grain Growers' Association to take up the work. The Association should stand ready to begin active operations at any time. Its active services may not be needed this year, they may not be needed for some years to come, but when they are needed the farmers should see that the Association has a royal backing.

The legitimate competition in the grain business is now so great that the California grain grower, if he is to continue in the business, must spend a little time and money to protect his interests. He can no longer trust the care of his affairs to the uncertain handling of those whose chief motive for being in the business is to extort from him all the commissions they think he can stand. A farmers' association that receives the hearty and cordial support of the farmers generally, can checkmate most of the sharp practices of which we are now made the victims. But to do this successfully the association must have no half-way support. It must be genuine. Money must be raised to properly conduct the business, and contracts must be kept with the most scrupulous care. The work must not be left to a few hundred farmers, and to a

few men to conduct the business, to the great neglect of their private affairs. There is a great work to do and we are all vitally interested in it. To make the affair the success it deserves to be there must be no drones. The stakes are high enough to entice the best talent obtainable. The profitable marketing of \$40,000,000 worth of produce depends upon the success of a strong farmers' organization.

Any person of average ability can see from the experience of this year what the possibilities before a farmers' organization are. Then, too, there is this fact back of a strong permanent organization: It will be in the field to stay. Its very existence will be a permanent available asset of the California farmer. It will be a standing notice to all interested parties that the farmer is determined to have the full value for his produce at all times. When so organized the farmer will hold the key to the situation.

An investment of five cents a ton on the grain raised in the State for protection purposes, and a better understanding of the business, would make a net return to the California farmers of not less than \$1,000,000 annually, beside adding the elements of prosperity and permanency to his calling.

GEO. W. PIERCE,
President California Grain Growers' Association.
Davisville, July 31.

THE VETERINARIAN.

That Sorghum Poisoning.

In view of the perplexing phenomena of sorghum poisoning which are occasionally encountered in our interior valley, later accounts of experiments in Nebraska are of much interest. We have published in the PACIFIC RURAL PRESS from time to time earlier accounts of the same line of investigation, but the following shows that no solution of the mystery has been reached, closer definition and description of the trouble are being reached. We quote from a preliminary report just issued of a study of sorghum poisoning by Dr. A. T. Peters, veterinarian of the Nebraska Experiment Station:

The experiments with sorghum to determine the cause of death from cattle running in sorghum fields were undertaken by the Department of Animal Pathology during the summer of 1901, as the result of numerous inquiries which came to the station asking for remedies and reporting deaths of animals that had been pastured on sorghum or had broken into sorghum fields. In most cases these animals did not regularly pasture upon sorghum, but broke into the fields from adjacent pastures or as they were being driven past fields of sorghum. Investigation proved that the animals did not die from bloat, as has been reported by many agricultural papers. Many cases were reported where death occurred without bloat, and in so short a time that no other theory except that of poison seemed tenable. In most instances where losses of this kind were reported, the sorghum had been stunted in its growth and was not entirely healthy and vigorous in its appearance.

We visited many fields where animals had died, but generally found these animals in so advanced a stage of decomposition that satisfactory post-mortems could not be held. Often the animals had been buried, and when other animals were turned into these fields they refused to eat the sorghum, and no information could be secured.

Analyses of sorghum from many of these fields, in the laboratory, failed to show any poisonous principle in the sample, which had necessarily been cut several hours before it could be submitted to a chemical examination.

INVESTIGATION ARRANGED.—In the spring of 1901 special effort was made to further the investigation of sorghum poisoning. A notice was placed in the leading State papers to the effect that the experiment station would send a veterinarian to investigate all cases of so-called sorghum poisoning, if notified in time to be of assistance or to secure any information. We responded to numerous calls of this kind; but in most instances where animals were turned upon the sorghum for the express purpose of poisoning them they refused to eat, and no data could be secured.

AN EARLY INSTANCE.—In response to one of these calls, received through Dr. W. A. Thomas, State Veterinarian, I reached the farm of Mr. Foss, near Aurora, at 7:30 A. M., on August 3, 1901. Two days previous fifteen head of his cattle had broken into a sorghum field, where they had remained twenty minutes. They were then driven into another field and were not seen again for several hours. The symptoms were drowsiness, running at the eyes, twitching of the muscles, numbness of the limbs, staggering gait, animal could not stand, involuntary passing of urine. On August 2 two more cows broke through the fence and were on the sorghum field five minutes. One hour later one of these animals, a four-year-old cow, was very sick, but finally recovered. The animal received liberal doses of alcohol as an antidote and had fully recovered on the morning of August 3, when I arrived at the farm.

EXPERIMENTS.—We turned a small yearling steer

on the sorghum at 8:30 A. M., but he refused to eat any sorghum, and after thirty-five minutes two more animals were turned into the sorghum, where they remained until 10 A. M., when only one, a small red steer, had taken any sorghum, and he had eaten only a few leaves. They were then turned back with the herd. At 10:35 A. M. the small red steer acted somewhat drowsy, but soon recovered.

At 11 A. M. we turned one red heifer and one yearling steer on the sorghum. The heifer was the only animal that ate any quantity, and, as subsequent examination showed, she ate only 1½ pounds of green sorghum. At 11:10 A. M. this animal dropped to the ground. Upon close examination it was found that she had stopped chewing her cud, and there was a peculiar twitching of the muscles of the nose and head and also of the body. The animal was very dull. At 11:15 A. M. she was taken out of the sorghum field and allowed to lie in a stubble field. When lying down her head was turned towards the abdomen, presenting the symptoms of a horse having the colic. The eyes seemed dull and gave off a watery discharge. There was a partial paralysis of the tongue and great quantities of saliva running from the mouth. The limbs and ears were cold. The pupils of the eyes dilated, pulse not perceptible, mucuous membrane of the rectum protruding, involuntary discharge of urine and faeces. Upon pricking the animal with a knife on the lower limbs, she showed no feeling. This animal was closely watched in the field by Mr. Foss and myself, and we feel sure that she did not take any weeds, but simply a small amount of sorghum, eating only the tops of the leaves. At 1:30 P. M. the animal was still lying on her right side, all the muscles of the head were contracted and showed involuntary twitching. The limbs were paralyzed and the animal was unconscious; the mucuous membrane of the mouth was of a salmon color. At 2:35 P. M. the animal was in great pain, and it was apparent that she would not recover. At the suggestion of Mr. Foss, the animal was killed, in order to hold a post-mortem examination.

POST-MORTEM EXAMINATION.—Animal still warm. The bowels were opened and contents of paunch carefully noted; there was in all 1½ pound of sorghum leaves to be found in the paunch. No sourness of the contents. The same was immediately put up in fruit jars with clean water and brought to the laboratory. The blood had a peculiar sweet smell like that of mint(?) It coagulated slowly. The mucuous membrane of the intestines normal; all other conditions of the animal normal. Made particular examination of the pharynx (throat), epiglottis and esophagus and found that there were no leaves lodged over same. If this had occurred, the animal would have died instantly, and not within three or more hours, as our record shows, and would have died in the state of asphyxia, and not presenting the symptoms of acute poisoning. In eleven post-mortems that we conducted careful search has always failed to reveal any leaves obstructing the pharynx, epiglottis or esophagus, which would have caused death by asphyxia or strangulation. We brought two jars full of the leaves taken from the field where the animal died, and took them to the laboratory for chemical examination, which is not yet complete.

One case of sorghum poisoning is reported from sorghum that had been cut several hours before feeding. Mr. E. F. Stoner of Chester cut sorghum at 8 P. M. August 2, which was fed to three milch cows at 8 A. M., August 3. About 9 A. M. these animals were first noticed to be sick. One died within an hour and fifteen minutes. The other two recovered within twelve hours. On August 6 I visited this sorghum field and made an examination of the sorghum, which was not fully matured. It was comparatively free from weeds. At 5:45 we placed a cow in this sorghum field and allowed her to eat as much cut sorghum as she would, up to 8 P. M., when she had consumed about twenty pounds. At 7 A. M., on August 7, the animal showed no effects of sorghum poisoning, and no bad effects followed.

CAUTION.—While a number of animals have died from sorghum poisoning in various fields, they constitute only a small percentage of the animals that have been pastured on sorghum each season. So far as our records go, they indicate that if animals are poisoned from eating sorghum, it occurs when they are first turned in the field and is not likely to follow after they have been on the pasture some days. It would, therefore, seem safe to turn a single animal upon the sorghum for a few hours, and if it does not suffer any bad effects, it will be safe to turn in the balance of the herd. Care must be taken in this case to observe that the animal turned in actually eats some of the sorghum, as it is very often true that an animal taken out of a herd and turned into a strange field does not eat on account of its strangeness under the new conditions.

The investigation of this subject is not complete and the work will be prosecuted during the coming season in an effort to determine accurately the cause of this disease. A large number of chemical analyses have already been made and many analyses remain to be completed. In this work, which has been carried on by the department of chemistry in conjunction with the department of animal pathology, the chemical department has been unable to separate certain vegetable enzymes from sorghum.

THE RANGE.

The Ranges of Northwestern California.

From Bulletin No. 12, Bureau of Plant Industry of the United States Department of Agriculture, by J. BURR DAVY of the University.

NO. 4.—MAXIMUM VERSUS OPTIMUM STOCKING.

We will suppose that we are dealing with a range of 1800 acres, stocked to its maximum carrying capacity, and that this maximum is five acres to one head of cattle, and its optimum eight acres to one head. This range would thus be carrying 360 head of stock; reduced to the optimum, the herd would number 225, a reduction of 135 head, or 37½%.

Though such a reduction seems heavy, it must be borne in mind that some of these annual ranges have naturally suffered a reduction by overstocking till it takes ten, twelve or even twenty acres to support an animal, which means that the herd has been reduced from sheer lack of feed from 360 to 180, 150 or even ninety animals to an area of 1800 acres. This does not take into consideration the possibility of still further reduction of carrying capacity to twenty acres to a head, which is said to be sometimes the case, but which is perhaps due to very exceptional circumstances.

The question to be considered is whether it is more profitable (1) to continue stocking up to the maximum capacity of the range, with the almost certain result of a forced reduction of the herd by 50%, 60%, or possibly 75%, in a comparatively short time from lack of feed, or (2) to voluntarily reduce the herd to the optimum capacity of the range, equivalent to, say 37% reduction, with the result that the capacity can be maintained indefinitely, that the stock will be in better condition all the time, and will command higher prices than those from depreciated ranges.

A few figures may help to make the case clearer. We have no data as to the actual number of years that one of these annual ranges can continue to carry the maximum number of head without deterioration, nor do we know how long it has taken them to run down to their present poor condition. It does not seem probable, however, that it would take more than fifteen years of carrying all the stock a range can possibly feed to reduce its capacity from five acres to ten or twelve acres per head.

If, for argument's sake, we take the arbitrary figures of fifteen years, and assume, moreover, that the range of 1800 acres has been used to fatten yearlings, all of which were sold off the succeeding year and new stock purchased, the aggregate number of cattle carried in the fifteen years under the plan of stocking up to the maximum would be 3930, and at the end of the period the carrying capacity would have been reduced from 360 to 150 head. Supposing that this ratio of 150 head could be maintained for the next thirty years, we should have an aggregate number of 8430 head of yearlings raised in the forty-five years.

If, however, we reduce the herd to the optimum at the outset, we should find the aggregate number raised would be 3375 head, in fifteen years 555 head less than by the old method; but at the end of the fifteen years the herd numbers 225 instead of 150, and this number can be maintained indefinitely; in ten years more we find that the aggregate has risen to 5625, as against only 5430 by the maximum method, an increase of 195 head, and by the end of forty-five years the aggregate is 10,125 head, an increase of 1695, which at a valuation of \$15 per head would be worth \$25,425.

Unfortunately these figures are not decisive, owing to lack of data as to the actual length of time it takes an overstocked range to deteriorate from five acres per head to ten or twelve acres per head. It is hoped, however, that they will be of some service to stockmen in calling to their attention a method by which they may calculate for themselves, with the data of their own ranges before them, whether it will pay to reduce their flocks and herds to the optimum carrying capacity of their ranges.

But whether the hypothetical figures are based on correct premises or not, the accuracy of the statement can not be denied that there are men to-day who are profitably running cattle and sheep ranges on the basis of the optimum carrying capacity of the range, while their neighbors on the maximum method find it hard to make a comfortable living, and many of them have mortgaged their ranges up to the limit or have lost them through foreclosure.

RANGE RENEWAL.

The stockman whose range capacity is already as low as ten or twelve acres per head is less interested in the difference between maximum and optimum than in the problem of range renewal, i. e., the possibility of restoring his range to a capacity of eight or possibly five acres.

Though something can be done toward range renewal, probably without actually diminishing the income over a period of years, by ascertaining the optimum carrying capacity and reducing the band correspondingly, it may be found necessary, where a range is worn out, to resort to other measures to restore it to a profitable condition. In such cases a complete rest of one or even two years will undoubtedly prove highly beneficial, giving the native forage

plants a chance to attain a luxuriant growth, and to produce and scatter the largest amount of seed possible, in order to reestablish themselves. Where a mortgage has been foreclosed, such a period of rest can often be accomplished while waiting for a purchaser or tenant. But to make it effective, the fences must be maintained in good condition, in order to keep out stray stock, especially horses. Some of the ranges in Mendocino county, which were lying idle during the summer of 1899 on account of foreclosure proceedings, instead of improving by the enforced idleness, suffered from the depredations of bands of stock which had either strayed there or were purposely pastured free of charge, en route to market, having gained access through gaps in the dilapidated fences. If a range is worth anything at all, it is surely worth keeping well fenced, and the cost of maintaining good fences should be as a mere trifle compared with the increment of value gained by a period of complete rest.

In many cases it may not be necessary to give the whole range a rest at one and the same time. Mr. Bentley, in his report* on the forage plants of central Texas, tells us that in that region, where overstocking has resulted in serious range deterioration, "some of the leading stockmen are now dividing up their holdings into several pastures, one being held exclusively for winter use, another for spring, another for midsummer or autumn. This practice will, in the case of the winter pasture, enable the early grasses to ripen and shed their seeds." Such a course may not prove as practicable or as beneficial, however, on the annual ranges of northwestern California, where the majority of the forage plants start growth together and mature at almost the same time, as it may be in central Texas, where, as Mr. Bentley says, "there is a great majority of native forage plants and grasses, comprising species that appear in succession from February to November." The practice may prove more adaptable, however, to the ranges of the coast-bluff belt.

Instead of resting the whole range at once and thereby, perhaps, missing a season of exceptionally good prices or of more than the usual quantity of feed, a portion of the range, say one-seventh part, could be fenced off and rested each year, the herd being weeded out at the same time, so that it will not exceed the optimum for the remainder of the range. At the end of seven years the rotation should be repeated, and there is little doubt that by some such method the carrying capacity could be gradually raised.

Where injurious weeds, such as *tacalote* (*Centaurea melitensis*), abound it will be found worth while to mow them off before they head out.

There are two questions to be answered in deciding the policy of range holding and stocking. First, is it good policy to allow the cash value of the range to deteriorate, if there is a way to prevent it? It is a true proverb which says "you can not both eat your cake and have it;" and overstocking is, as we have endeavored to prove, equivalent to living upon both interest and capital, a sure way to diminish both.

The stockman who owns his range will see the force of this point more quickly, and will be more willing to act accordingly, as far as he is able, than the renter. He will realize that as long as he can make a living off his range he can not do better than invest any surplus in improving the condition of both range and herd by weeding out and keeping the number down to the optimum. The stockman who rents his range, however, acts on a different principle. His sole object is to make the most out of the range and to invest his surplus in more stock or in other lines. Naturally he does not care anything about maintaining the value of the real estate, as it does not belong to him, and as a result the rented range usually suffers most severely. This evil can be remedied to a great extent by one or other of two methods: (1) A system of long-term leases, under which it is to the tenant's interest not to materially reduce the carrying capacity, at least during the term of his occupation; and (2) a clause in the lease limiting the number of head to be carried on the range. In the latter case it will obviously be necessary to exercise great care not to sign for more than the optimum.

The second point to be considered is one which affects both the owner and holder of a long-term lease. It is whether it is ever wise, from the point view of personal economy, to stock beyond the optimum carrying capacity. In view of the fact already pointed out, that when once commenced the deterioration of an annual range proceeds with great rapidity, it would be poor policy to continue to carry one head to five acres, or 360 head on an 1800-acre range, with the certainty of its reduction to perhaps 150 head in fifteen years' time, if by reducing the herd at the start to one head to eight acres, or a total of 225 head, the same total profits could be obtained in a total period of twenty years and the size of the herd and the range capacity be undiminished at that time.

RANGE IMPROVEMENT.

By range improvement we mean not only its restoration to its former carrying capacity, but also an improvement of the character of the range and of

the quality of the feed. This is effected by the introduction of other kinds or races of forage plants.

In order to understand fully the problem of range improvement, thereby guarding against wasted effort in directions which offer little chance for success, it is necessary to appreciate the conditions which determine the character of the forage plants on a particular range.

What causes the difference between the annual and the perennial ranges of northwestern California? The perennial ranges (if we exclude alpine meadows) are found only along the coast bluffs, where the climate is relatively cool and moist in summer, owing to proximity to the ocean and the prevalence of summer fogs. It must not be supposed from this that these maritime perennial ranges keep green throughout the summer. They do, however, keep green some weeks later than the interior ranges, which feature, together with the fact that they do not deteriorate as rapidly as the annual ranges, makes them more valuable than the latter.

The annual ranges, on the other hand, are found in the interior, beyond the reach of the sea fogs. The open ridges are exposed to the full force of the scorching north winds and great sun heat during a period of sometimes eight to ten or even more weeks of absolute freedom from rain.

It is evident that the essential characteristics of good forage grasses best adapted to the dry, interior ranges are: (1) Adaptability to the peculiar climatic conditions; (2) tenacious hold on the soil, i. e., capability of withstanding trampling and grazing; (3) persistence for more than one year; (4) propagation from the roots rather than from seed.

The species which appear to best meet these requirements, and which are therefore recommended for trial on the annual ranges, are: Buffalo grass, blue grama, white clover, red fescue, sheep's fescue, hard fescue, bur clover, California lotus, and Australian ray grass.

All these species have proved suited to the climate and conditions at Berkeley, but whether or not they will be found thoroughly adapted to the climate of Mendocino and Humboldt counties can be determined only by experimental culture on the ranges themselves.

If possible, they should be planted out at the time of the first fall rains. They should in any case be carefully fenced from stock until thoroughly established. It will be advisable to sow at the same time seed of some annual species, such as soft chess, which will act as a nurse crop while the perennial species are establishing themselves.

If it is intended to sow seed in quantity, it will be wise to have it carefully examined at the time of the purchase, and only to purchase clean seed, free from seeds of injurious weeds. Some stockmen have injured their ranges almost as much as they have benefited them by the introduction of injurious weeds along with the seed of valuable forage plants.

The writer does not presume to prescribe an absolute and infallible remedy for worn-out ranges. Each range has, to some extent, its own individual peculiarities, and the man who has lived several years on the land, through divers seasonal variations, should be the one best fitted to decide how to treat that land. In matters of range renewal and improvement it is the practical and well-informed stockman himself who will have to bring the ranges back to their full carrying capacity. However, such a man is always looking for suggestions, and it is with the view of bringing them directly to his notice that these pages have been written; they are simply suggestions, and their adaptability to divers conditions must be decided by the stockman.

THE FIELD.

Horehound on the Range.

TO THE EDITOR:—In the issue of July 26 of the *PACIFIC RURAL PRESS* is an article entitled "The Ranges of Northwestern California." In this article many valuable hints are given in regard to the deterioration of stock ranges by overstocking, but in vain did we look to receive a timely warning of the most dangerous weed that has ever gained a foothold in California. This is horehound (*Marrubium vulgare*). This is, as most people know, a perennial plant, the roots of which no drouth of southern California will injure, and, being extremely prolific, its seeds are distributed by the wind, by the wool of sheep, also by its fibrous covering sticking to the hair of all domestic animals. We called the attention of the botanist of the United States Agricultural Department to the rapid spread of this most dangerous pest, and promptly were advised that there is much complaint of its spreading in northern California and Oregon. An elderly miner, who had been mining for gold in the Sierras, told me that it was following up the snow line in the mountains.

Thirty years ago there was not a plant growing in southern California, except in gardens, which was rare. Now the Sulphur mountain is bestudded with it in most places, and it is rapidly taking the place of clover, alfalfa, yea, and even foxtail and all other plants are yielding to its encroachments.

It seems to spread in all kinds of soil, but it would

* Bentley, H. L.: A Report upon the Grasses and Forage Plants of Central Texas; U. S. Dept. Agric., Div. Agros., Bull. 10, p. 10, 1898.

appear that black loam and adobe soil are most conducive to its growth.

Of course, deep plowing with much "elbow grease" expended in hoeing will keep it from growing in our orchards and gardens, but we have seen it making heavy encroachments on recently sown alfalfa. It seems difficult to determine which it most delights in, wet seasons or dry seasons. It will spread rapidly in either dry or wet years, but would perhaps multiply more rapidly in wet years.

This plant is said to be a tonic and an expectorant. Our feelings have been toned up to a high pitch in opposition to this vile plant, and, if used as an expectorant, there is enough of it in southern California to sicken all the people and all the lower animals, if they would eat it. People eat it in horehound candy, but instinct (the higher order of intuition) enables domestic animals to let it alone. They may eat the Russian thistle, briars and some other undesirables, but not horehound.

In the fence corners, along the public highway and on pasture lands, where a few years since there were good, nutritious grasses, the horehound grows so thick that scarcely anything else can grow. Nothing seems to hold its own against it. It, unlike annuals, comes from the roots as soon as the first rain of autumn falls.

I planted a bunch of it about fifteen years ago, but soon discovered my mistake and have been digging it up around my yard three or four times each year since to keep it from spreading. Do not allow a bunch to ripen on your land, for "an ounce of prevention is worth a pound of cure."

Nordhoff, Cal.

H. J. DENNISON.

FRUIT PRESERVATION.

Prune Curing.

Mr. J. Luther Bowers of Santa Clara county writes to the San Jose Mercury on prune curing, which is timely and suggestive. He says:

Probably in no one process in the handling of fruit is there so wide a difference as in the different ways that prunes are handled by experts at the business. Each one has his "best mode." Some use one brand of lye, some another brand. Some use one pound to twenty-five gallons of water, while others use one pound to one hundred or more gallons of water. With all these varied conditions bloaters or frogs will come. A bloater or frog is a prune that forms a gas in the flesh between the inner skin and the pit. Very few dry yards are entirely free from bloaters.

CAUSE OF BLOATERS.—The writer has made many experiments to find out what causes a prune to bloat. These experiments run over a period of five seasons. Some experts give as a reason, "Prunes laid in hot sun too long," "Trees were dying," "Trees were shaken too hard and prunes too green." My experiments have proven that none of the above reasons have anything to do with it whatever.

The experience of almost every prune drier is: The last prunes have the most bloaters. Also on the same tray one end will be entirely free and the other end will be from one-third to one-half bloaters, or one side of the tray will be full, the other side perfectly free of bloaters. What is the cause? The dip has not been uniform; lye not strong enough; water not boiling. If the prunes were delivered on the end of the tray, part of the prunes were dipped too cold; and the same if the prunes were delivered on the side of the tray.

PREVENTING BLOATERS.—During the season of 1900 I took the dry prunes from some 5000 trays, and not one bloater was found in the entire lot. I will give my mode of drying; others may have a better plan. If they have I would like to know it. I use an Anderson improved dipper, end delivery. The prunes are not graded before or after being dipped while in the green state. I use nothing but the best lye—Babbitt's, if I can get it. I have tried the Greenbank, but will not use it again. Prunes dipped with it lose that gloss and luster so much desired in dried prunes. Prunes should be allowed to get perfectly ripe and left to fall themselves, and not shaken. My water is heated by steam with a heater of my own construction, which keeps the water in circulation. I use one pound of lye to every twenty-five gallons of water. Condensation of steam keeps the dipping vat full. I sometimes use the same water three or four days, adding a one-pound can of lye for every three or four tons of prunes. I never put a prune in the dipper unless the water is boiling hot. Better let six men sit down and wait ten, fifteen or twenty minutes for the water to boil than to let the same number of men spend three, four or five hours picking out bloaters.

DIPPING AND DRYING.—When everybody is ready the prunes are poured into the dipping vat, one box at a time, and allowed to remain just three seconds, or while three can be counted—one, two, three—no longer. They are then spread on the trays, one deep only, and taken to the dry yard on cars. The Robe de Sargent prunes are kept separate and are dipped in the same water, but dipped with one man at the lever and one to empty the prunes in the vat, and

with a firm grasp of the box they are, with one motion, emptied into the vat and dumped immediately. One second is sufficient to do the work. About the fourth day I turn them over on the tray, and they dry nice and glossy and do not stick to the trays. In stacking the dried fruit I always try to do the work during the hottest part of the day, from 1 to 3 o'clock in the afternoon. I never stack a tray of fruit until I can take up a handful and give them a gentle squeeze, open the hand quickly, and then, if they separate, stack them; if they stick together, leave them in the sun until they will separate. They are left in the stack until they are of the proper dryness to put in the house, where they are left until ready for grading.

GRADING.—Now, there is one point in my mode of drying that many object to until they have tried it, and that is in regard to grading in the green state. It does not seem reasonable, but if dipped properly a large prune will dry as soon as a small one. Prunes are more or less broken during the process of grading, especially when graded after being dipped. The broken prunes make a muss, and a mussy prune always sticks to the tray. All the screens have been taken out of my grader, except the dirt and leaf screen, and a special division board put in in their stead, so as to deliver one-half of the prunes on each side of the grader. Those who have never tried the above mode of handling prunes should try it.

LAST OF THE CROP.—One thing has been forgotten, and that is the last clean-up of the trees should be left in the dipping vat say from ten to fifteen seconds, or just so long that they do not check or crack. The gas or fermenting germ of the prune lies in the acid just under the skin, and the late prunes have more of it than those ripening earlier, and this must be killed before the prune will dry. If it is not killed, the prune forms a gas on the inside, the prune swells to its utmost capacity, and either sours and turns to a soft mass or dries and leaves a bloated prune or frog. In going through the sweat these bloated prunes will shrink up and cannot be told from a non-bloated prune by a casual observer; but Mr. Buyer knows better, and when they come to the processing just as soon as they get hot they will bob to the top like so many corks.

We prune growers as a people should try to make our fruit better every year. The time is fast coming when we can fool a buyer once, but the next time he will pass us by.

HORTICULTURE.

Fruit Growing in the Sierra Foothills.

By H. E. BUTLER, Assistant Manager Penryn Fruit Co.,
in Sacramento Bee.

Horticulture in the foothills of northern California has in twenty years developed into an industry of enormous proportions. In the early 80s fruit planting on an extensive scale commenced. Inasmuch as it has been in the districts lying contiguous to the Central Pacific Railroad, where it passes through the foothills, that the greatest progress in fruit culture has been made, it is the purpose of this article to discuss the development, condition and possibilities of the industry in that particular section.

When the pioneers of the present great industry—among whom will be remembered Robert Williamson, W. J. Wilson, W. R. Strong, P. W. Butler, C. T. Adams, Robert Hector and many others—commenced, by strenuous effort, to convert the forest into productive orchards, only a few family orchards growing in the dooryards of stockmen, protected from the herds by crude brush fences, furnished evidence of the possibilities of soil and climate. These supplied the local demand. Where were markets to be found for the products of the acres being set out by these optimistic planters? But demand has ever grown apace with production, until a great industry has been founded and the products of the orchards are the luscious fruits finding their way, fresh, into the markets of the United States, Canada and even Europe.

ADVANTAGES FOR SHIPPING.—By reason of marvelous keeping qualities of the foothill fruits and advantageous shipping facilities, these fruits are supplied, fresh and attractive to consumers across the continent, meeting ready demand at profitable values. Under the whitened crest of the Sierra Nevada these orchards flourish, the melting snows from Nature's vast storage supplying water for irrigation during the long rainless summers.

The peach, plum, apricot, cherry, pear, berries and the orange were early found to mature in absolute perfection. With a temperature ranging seldom below freezing and not excessively hot, these crops thrive, ripening their fruits through a season extending three-fourths of the year. As has already been noted, a great proportion of the yield is marketed east of the Rocky mountains, but Colorado, Nevada and Utah are also supplied in "local shipments," and California canners use the crops of yellow clingstone peaches.

THE COST OF ORCHARDS.—The cost of developing a profitable citrus or deciduous orchard need not deter a person who brings, beside a small capital, energy, sobriety and common sense.

Twenty acres, or even less, properly cared for and planted, should yield the owner a comfortable living. The cost of twenty acres of land suitable for orchard purposes is from \$20 to \$150 per acre.

This may seem a wide range, but it is occasioned by location, altitude, distance from shipping centers and other conditions. Good land, however, can be had at a cost nearer the lower figure, and in abundant quantities.

The cost of planting twenty acres of deciduous orchard and carrying on for one year would vary with the individual undertaking it, but probably \$1000 would cover all expenses, possibly less, while the planting of an orange grove, of the same acreage, would cost about double, by reason of the greater cost of young trees and extra expense of planting, etc. Either would be a most profitable investment. Many growers have paid all expenses of working their young orchards, after the first year, with the proceeds resulting from the sale of small fruits, such as strawberries, raspberries and dewberries and vegetables, raised between the rows of trees while the trees were too small to shade the ground sufficiently to prevent.

While the cost of making a self-sustaining and profitable orchard might vary, suffice it to say that no one with a reasonable ready capital and the requisite practical sense need fear failure. In proportion as cultivation, fertilization and irrigation are properly and scientifically pursued, he will succeed.

SUCCESSION OF CROPS.—It has been found most profitable, taking one year with another, to plant a succession of crops. Commencing with the early cherry, ripening in April, one could plant, as the safest and surest proposition, a succession about as follows, in proportions according to the peculiarities of each: Two leading varieties of cherries, Triumph and Hale's peaches, earliest varieties of Oriental plums, such as Climax, Red June and Burbanks; Early Crawford, St. John and Elberta peaches, with midsummer plums, as Wickson, Giant, Hungarian, Diamond; the Bartlett pear, table grapes, Late Crawford, Lovell and Piquets Late peaches, followed by later varieties of table grapes and pears and Salway peaches, the Phillips and Levy yellow canning clingstones.

FRUIT INDUSTRY PROSPEROUS.—Hardly a season has passed without large returns on some variety. Many a mortgage was paid off and many a fine home built with the proceeds from crops of yellow clingstone canning peaches in 1898, when conditions developed most favorably to the peach growers of the foothill districts. With short crops of that particular fruit in other districts, these districts harvested full crops on a market ranging from \$40 to \$60 per ton for the peaches in lug boxes delivered at the shipping houses. One has only to figure the result from an orchard planted 120 trees to the acre, bearing 100 or more pounds to the tree, at prices mentioned above, to appreciate how mortgages were paid and money put in bank. The same conditions existed on clingstones during the past season—1901—which was also an exceptionally good season on all varieties.

On the other hand, during the financial depression through which the country passed between 1893 and 1897 prices ruled low on most varieties of fruit, but it is extremely doubtful if the fruit industry was affected so seriously as other industries, since most growers were able to pay operating and living expenses, with many cases of surplus profits.

It is, then, reasonable to say that the fruit industry in the foothills of northern California is in a thrifty and promising condition; that excellent opportunities exist for investment of new capital. While the territory peculiarly favorable to the profitable production of fruits, by reason of climatic conditions, shipping facilities—i. e., nearness to shipping points on the railroad, which is of great advantage in the handling of fresh fruits—might be termed limited, there are still many acres which will be rapidly converted into orchards.

It is the foothills of northern California and their advantages of climate, profitable investment and availability which will attract the attention of home-seekers coming to the State. To these inducements will be found added excellent schools and academies, churches, libraries and public enterprises.

On the main line of transcontinental railroad, through the great fruit districts of Placer county, Newcastle, Penryn, Loomis and Auburn are the shipping centers, from which thousands of tons of fresh deciduous fruit are shipped each season. Nearly 2000 carloads of green fruit were shipped from these points during the season just passed, making about one-third of the total output of fresh fruit shipped from the State. While this would seem an enormous quantity of a perishable commodity to be disposed of promptly—and it undoubtedly is—still, when one takes into consideration the vastness of the market on which these producers depend, and the fact that New York City alone used, this season, at very favorable prices to the grower, over 1400 carloads of California fresh deciduous fruit, the magnitude of the output dwindles in comparison, and strengthens his faith in the continuance of growth and profit of the industry, and shows to a careful investigator that there is a bright future for the horticulturist in the foothill districts of northern California.

Agricultural Review.

ALAMEDA.

PRICES FOR WINE GRAPES.—Livermore Herald: Negotiations have just been completed by which a large percentage of the vineyards of the Livermore valley, aside from those connected with wineries, have passed into the control of the Wetmore-Bowen Co. for periods of from three to five years. A uniform schedule of prices is included in the contracts of \$30 a ton for white grapes and \$20 a ton for the black varieties. While negotiations are still pending for several vineyards, the owners of the following have given contracts: Rose vineyard 200 acres, Rohling vineyard 25 acres, D. A. Inman 90 acres, D. M. Teeter 40 acres, C. A. Buckley 100 acres, E. R. Lillenthal 148 acres, Captain E. S. Cunningham 30 acres, Mrs. J. S. Stevenson 30 acres. Added to this list are those already under the control of the company—C. J. Wetmore 80 acres and Cresta Blanca 75 acres. Following are the varieties which come under the head of black grapes: Cabernet, Carignan, Mataro, Petit Bouschet, Zinfandel, Petit Pinot and Meunier. It is estimated that the yield of these varieties this year will be from two and a half to three tons to the acre, and will bring \$20 a ton, with the exception of the Cabernet, which is worth \$30 a ton according to the schedule. The white grapes for which \$30 a ton will be paid are expected to yield from three to five tons an acre, except in a few favored spots, where they will run higher. The varieties included under this head are: Burger, Folle Blanche, Colombar, Semillon, Sauvignon Blanc, Muscadelle du Bordelais. The three last named varieties are those which produce the highest type of wines.

APRICOT YIELD DISAPPOINTING.—Niles Correspondence Oakland Enquirer: Apricots are very late in ripening this year and are not as good as usual. An immense crop was promised, but the amount will fall short by many tons, as the fruit has not grown at all in the last month. It is feared some Moorpark will never ripen, but will shrivel on the trees. Potatoes, which have been poor and high priced, are sound and plentiful this season and the price is down.

BUTTE.

A PROFITABLE FIG TREE.—Oroville Register: There is a fig tree in Oroville from which the owner realized last year \$70. So far this year he has realized \$51, with another crop to come. The tree is twenty-two years old and is of the black variety.

CONTRA COSTA.

FRUIT NOT HURT.—Clayton Correspondence Oakland Enquirer: The hot wave of last week, which lasted four days, did no damage to grapes here. The thermometer reached 105° in the shade.

THE BEET CROP.—Gazette: The beet sugar crop in all parts of the county will be heavy this year, and, as a result, the mill at Crockett will have a big run.

FRESNO.

IRRIGATING FRUIT TREES.—Reedley Exponent: Many beginners in the fruit-growing industry labor under the impression that to grow fruit trees successfully the land needs to be saturated with water. This is an entirely erroneous idea, and, if put into practice and continued for several years in succession, will eventually prove very disastrous. The writer has several apricot trees growing on land where it is 34 feet to surface water, and these trees were irrigated only once last year and no oftener this season, yet they are as large and healthy as those grown on land where it is only 4 feet to water. Thus it will be seen that it is, if nothing else, an unnecessary waste of labor to irrigate continually.

GLENN.

THE TOMATO CROP.—Orland Register: Arnold and Hartwell Brown, who have a tomato patch of some six acres, are beginning to place their fruit on the market. They are now picking from 1100 to 1500 pounds daily and finding ready sale for them in Willows and Orland. Their market opened at 6 cents per pound and has gradually fallen until the present price is a trifle under 2½ cents. When the cannery opens at Corning, about the 15th inst., the price will be still less, but the daily output will be correspondingly large, which will more than make up for the deficiency in prices.

MONTEREY.

A FREAK IN BARLEY.—Salinas Index: Some person who did not leave his name or address left at the rooms of the Monterey County Chamber of Commerce some curious growths in common barley. The curiosities consist of four stalks. Of these, two have three separate heads and

the other two have two heads fully developed and filled with large-sized kernels of grain.

NAPA.

AN INGENIOUS FARMER.—Napa Journal: C. U. Reams, son of J. W. Reams of Gordon valley, has invented a number of articles which he intends to have patented and which will be exhibited at the coming county fair. There is a farm gate of ingenious pattern that can be manipulated with the greatest ease. An apricot cutter and an almond cracker will be exhibited in operation.

ORANGE.

POISONED FROM APRICOTS.—Santa Ana Blade: Mrs. A. H. Bean is the victim of an unfortunate combination of circumstances whereby she has lost a finger and a portion of her left hand. She was cutting apricots during the early part of the season and in constant using of the knife received a number of cuts about her hands similar to those that any fruit pitter can show at this time of the year. A cut at the joint of her forefinger began to trouble Mrs. Bean, but she thought that the soreness was caused by the bending of the fingers at that point, paid little attention to the wound, and continued about her work handling the fruit. Last Thursday the finger began to swell and the inflammation began to spread to the hand. Gangrene set in and when a physician was called in it was too late to save the finger. In consequence, the entire finger, knuckle and part of the hand adjoining were amputated at the Santa Ana hospital.

RIVERSIDE.

NOTES ON APRICOT CROP.—Press: A. J. Stalder has returned from Ontario. He went over to sell some of his dried apricots and reports the prices good and the work in the fruit flourishing. The tremendous crop is being kept well under control and very little loss has been suffered for lack of help. Mr. Stalder says the fruit raised on the sandy soils is counted better by quarter of a cent than that grown on other soil. He got 5½ cents a pound for what he sold and prices are holding well.—B. M. Lillibridge and son have finished the work of pitting and drying 250 tons of apricots. For the past three weeks a large force of cutters have been employed, besides a field crew of twenty hands. It is not possible to make a fortune pitting fruit, but those who are considered experts at the work average \$9 a week. Fully \$1000 has been paid to the cutters alone and \$500 additional to the pickers, spreaders, etc. The fruit is of good color and quality and will be stored in air tight bins, which have a capacity of twenty tons each. Messrs. Lillibridge estimate the dried product at forty tons.

SAN JOAQUIN.

COW GIVES A TON OF MILK IN THIRTY DAYS.—Stockton boasts of having two dairy queens holding the world's official thirty-day butter record for their respective ages. Representatives of the Agricultural College at Berkeley recently visited Riverside Ranch, owned by the Pierce Land & Stock Co., on Rough and Ready island, near Stockton, and conducted a series of official tests under the rules of the Holstein-Friesian Association of America. It is they who report the record breakers. One of the above-mentioned animals is a two-year-old heifer imported by the Pierces when but a calf from Wisconsin. Her name is De Natsey Baker. She gave as high as 59 pounds of milk a day, her milk testing as high as 4.1% butter fat, making 17 pounds 7 ounces of butter in seven days. Her thirty-day record was 1689 pounds of milk, making 72 pounds 10 ounces of butter. The other animal, Fidessa by name, a four-year-old, bred at Little Falls, Mont., by United States Senator Paris Gibson, gave 569 pounds of milk in seven days, making over 25 pounds of butter, her milk testing as high as 5.8%. Her thirty-day record is 2392 pounds of milk, making 91 pounds 5 ounces of butter. The latter record has been beaten by only one cow, and that is a five-year-old cow known as Lillith Pauline De Kol, owned in New Jersey. Fidessa has given her own weight in milk in two weeks' time.

HOT WEATHER DAMAGED TABLE GRAPES.—The hot weather has injured the table grapes, although the wine grapes did not suffer. Tokays and Muscates are injured the most, but where the foliage was heavy, as in some vineyards near Lodi, there was little or no damage. The crop will be large this year, however, in spite of some unfavorable conditions.

SANTA BARBARA.

BIG RADISH.—Press: A monster radish was grown by W. H. McCaleb, of Santa Barbara, and was planted for the common table radish. It weighs five pounds, nine ounces. The length of the root is 24 inches, and with the top the length is 45 inches. The greatest circumference is 16 inches. There was no forcing process to

produce this specimen. It just "grew and grew," and was beginning to put out the seed stalk when it was pulled, or rather, dug.

SANTA CLARA.

CANNING EIGHTY TONS OF APRICOTS DAILY.—Mercury, Aug. 1: Yesterday at the California Fruit Canners' Association 60,000 cans of apricots were put up. To-day the management expects the output to reach the full capacity of the big plant, which is eighty tons of fruit. One thousand cans corresponds practically to a ton of fruit. Yesterday's output, therefore, amounted to sixty tons of fruit. To-day's and every succeeding working day until September will amount to eighty tons, or, in other words, 80,000 cans. The apricots are coming from all sections of the valley. The greater part of the fruit is of the Moorpark variety. Six hundred people are now employed at the California cannery alone. This number will be augmented by the addition of 200 more persons at once. Nearly all the fruit used is what is designated as eights, or eight apricots to the pound. No difficulty is found in securing fruit of this size, and much of it is larger.

IMMENSE CROP AT CAMPBELL.—Fruit is stacked high at the Campbell drier. Though the pitters have worked every night this week, they are still away behind and it has been considered necessary to refuse to receive more fruit. Pitters are too few in number to handle the immense crop.

EXPERIENCE IN CHICKEN RAISING.—Morgan Hill Sun-Times: W. H. Ward of Paradise valley began the year with about 150 hens, and hatched by incubator about 800 chicks, of which he has raised about 600. He has disposed of a large number of young fryers in the San Francisco market at a fair price. The total egg yield has been 800 dozen. Mr. Ward says that he has obtained \$200 worth of eggs for every dollar's worth of feed. He feeds meat meal, wheat, rolled barley and corn meal, feeding mush in the morning and dry feed during the day.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: The Pajaro Bellefleur crop is not going to show much small sized stock this fall. Four tier stock will be in big showing, and even larger sizes in quantity. The crop is not going to show as many carloads as last year, notwithstanding the number of young trees in first bearing this year. A conservative packer, one whose estimates we have found year after year to come very close to crop results, informs us that he does not believe the Bellefleur crop will run much, if any, over 500 carloads of good merchantable stock suitable for out of State trade. Last year the out of State shipments of Bellefleurs were 650 carloads. Several orchard sales were made this week on a weight scale, prices ranging from \$25 to \$28 per ton delivered. The asking price for Bellefleurs is 85 cents per box, while the offers are considerably less. Last year the season opened with heavy sales at 70 cents per box. Several orchardists who have plenty of trays and good grounds for sun curing have been paying from \$10 to \$14 per ton for their neighbors' apricots, and are drying them.

SONOMA.

FOXTAIL IN HIS EAR.—Index-Tribune: Recently while working in a harvest field near Petaluma a foxtail worked itself into one of Mr. M. Dolcini's ears. Its presence was not felt until some time after. It was then removed. Inflammation set in, however, and a physician was called to examine the ear, when it was discovered that in removing the foxtail a portion of it had been left in the ear. The pain became so agonizing that Mr. Dolcini was taken to San Francisco to be treated by an ear specialist. It is feared that it is too late to remove the small piece of foxtail remaining in the ear and that its presence in the ear will cause death or loss of reason.

BIG CROP OF PRUNES.—Santa Rosa Press-Democrat: Off his 200 prune trees J. Killam of Trenton expects to have fifteen tons of fruit this season. The crop is the largest he ever had on his place. He will dry his prunes and peaches this year.

ARMY OF BLACKBERRY PICKERS.—Sebastopol Times: Blackberry picking is now at its height in Analy township, which produces more blackberries and raspberries than all other sections of the State combined, and it requires a large army of workers to strip the vines. At present T. E. Barlow is employing over 100 hands in his berry fields near town. All other growers are likewise engaged. The price of berries this year is \$40 per ton, and at this figure there is a splendid profit for the grower. Berries are being shipped to San Francisco in carload lots.

PRICES FOR PEACHES.—A price of \$15

per ton for peaches has been fixed. The crop this year is very heavy and the above price includes all varieties—in other words, it is a straight figure. The cannery will probably exceed its immense pack of last season.

HOP CROP AND PRICES.—Sebastopol Times: There is promise of an excellent hop crop in Sonoma county this season, both as to quantity and quality, and all growers are looking forward to the reaping of a rich harvest. The only difficulty will be in procuring sufficient help to gather the hops. Last year a few growers in this locality contracted their hops for a term of years at 14c per pound, and there is weeping and wailing among the unfortunate few. It is said on good authority that this 14c contract may make a difference of \$15,000 in the receipts of one grower in Green Valley, the calculation being based on the prediction that hops will command in the region of 30c per pound. He has a very large acreage planted to hops, and the prospects for an immense yield in his field this year are most excellent. He contracted to deliver his hops for a term of years at 14c per pound.

STANISLAUS.

NOXIOUS PLANT IN ALFALFA.—Modesto Herald: Chris Jensen, a farmer in Turlock district, exhibits specimens of a noxious plant that he finds quite prevalent in a portion of his alfalfa, and which the casual observer would take for alfalfa, so close the resemblance. Stock will not eat it, however, and it was observation of this fact that brought the plant to Jensen's attention. While it looks and roots like alfalfa, it has a different smell and taste, both noxious. It came in alfalfa seed from Utah. Mr. Jensen bought two sacks of the Utah seed. The seed of one of the sacks was clean, obviously, for there is no trace of the noxious plant on the land sown to it, the nuisance being confined to the land sown to the seed from the other sack. Jensen proposes to root it out, plant by plant, and there is apparently no other way to get rid of it. [This is sweet clover, Melilotus alba, and is becoming a great pest in many alfalfa districts.—Ed.]

SUTTER.

HOT WEATHER KILLED BEES.—Independent: E. R. Taylor, who resides on the Stewart tract, reports that last week's hot weather melted about two tons of honey for him and killed all his bees.

PEACHES WITH SPLIT PITS.—Orchardists say there are more split pits among the cling peaches this year than ever known before. The canneries have refused all such fruit and many of the largest sized peaches are being sent back to the growers owing to this fault. The cause for this condition has not been found as yet. It has been stated that it was due to over-irrigation, but the best informed orchardists claim irrigation has nothing to do with it. They are inclined to think the cold spring caused it, but whether this is a fact is not known.

GOOD YIELD OF MELONS.—Sutter County Farmer: The sixty-acre melon patch of Shattuck & Ford, near Tudor, is making a good yield, most of the crop being late. From two acres planted to the Rocky Ford variety of muskmelons they have already harvested over \$300 worth, and there are still melons enough ripening to make over \$100 more.

TEHAMA.

PRICES FOR WHEAT AND BARLEY.—Red Bluff News: Elmer L. Sisson of Elder Creek has finished harvesting his crop of wheat and barley and is now hauling the product to the railroad. His wheat is being hauled to Tehama and his barley to Corning. He has sold both yields, receiving \$1 per hundred for the wheat and 80c per cental for barley.

YOLO.

HOT BLAST DAMAGED FRUIT.—Mail: Mr. Theodore Fisher reports that the recent hot weather damaged fruit considerably in the vicinity of Winters, especially in the foothills just west of that city. "The grasshoppers," said Mr. Fisher, "stripped the trees and vines of their foliage earlier in the season, and when the hot weather came last week they were not sufficiently protected from the hot rays of the sun and as a result were quite seriously injured. Fortunately this is not true of a greater part of the fruit district about Winters, as the hoppers seem to have operated in paths widely separated and many of the vineyards and orchards escaped damage altogether, while some were only slightly affected."

WINE GRAPES NOT HURT.—Bee: H. M. La Rue went to Davisville Saturday to look after his wine grapes. He feared the intense heat of last week had burned the fruit. He found, however, that the damage to the crops on account of the heat had been very slight in the neighborhood of Davisville.

THE HOME CIRCLE.

Crimes of the Mosquito.

In the marshes where the bullfrog sings
his mellow serenade,
In the swamps where booms the bittern in
the gloomy cypress shade,
And the cheerful alligator lurks within
the everglade;

In the cistern where rain water pours
and trickles down the spout;
In the stagnant pools, in grasses, and
'most everywhere about,
The bloodthirsty mosquito from the egg
is hatching out.

And, once hatched, he comes among us
with his pesky little bill,
And he settles on our persons very much
against our will,
And, inserting his proboscis, he proceeds
at once to drill.

And when through our epidermis he has
managed for to bore
He fills up his little carcass to the burst-
ing point with gore.
This is strictly true, though doubtless
you suspected it before.

You think that you have got him, and
find out that you have not,
For he keeps one eye wide open to elude
the sudden swat,
And knows just how long it's healthy to
remain upon the spot.

You may screen up all your windows and
hang netting o'er your bed—
It doesn't keep him out, because he stays
inside instead,
And you wake up in the morning and find
out that you've been bled.

Similarly you may smear yourself with
evil-smelling stuff
That is guaranteed by druggists on mos-
quitos to be rough,
But they seem to enjoy it, though it does
smell bad enough.

So he breaks our summer slumbers—robs
us of our needed rest;
So he drives us from our porches, where
the vines he doth infest,
And he spoils the fun of fishing, does this
sanguinary pest.

But upon the brute's demerits we'd en-
deavor to be dumb;
We'd forgive him all his faults—no incon-
siderable sum—
If he'd simply go about his bloody busi-
ness and not hum.

—Chicago Daily News.

Where the Apple Reddens.

Her hair was windblown; her hat,
turned down and shading her bright
face, was of white calico and belonged
properly to a young brother. Her
pink cotton dress had paid repeated
visits to the washtub, and, to the
critical eye, was nearing the period
when yet another tubbing would be ad-
visable. She would have said she was
horribly untidy—not fit to be seen; in
fact, she said it.

He considered, and rightly, that she
was so exceptionally blessed as to look
delicious in anything, and he wisely put
that also into words.

"That's prettily said," she laughed.
"No—don't go on. I am not such a
hoysen but that I know the correct
and only answer. I only like"—she
molded her mouth to pensiveness—
"compliments that may be true."

"Mine all are when addressed to
you," he hastened to declare.

"Then they are more like bare
statements of facts than compliments,
aren't they?" she smiled up at him,
"and not specially to your credit."

"Greatly to yours," he insisted,
"since your charms have no margin
for embellishment."

"O, that is sweetly said," she cried.
"Don't, please, say any more, for you
cannot better that!"

"But I can't stand mum," he ob-
jected.

"You can sit in silence, though."

"What do you mean?"

"Last night, at dinner, at your lady
love's side. I was watching you—be-
ing opposite and, with no one but a
brother to speak to myself, I could not
help it. And neither of you spoke—
at any rate, you didn't. So you see
what you can do if you try."

"It was she—who had been trying,"
he said, in mournfulness.

"Had she? Poor you—she looks a
little like that." She pulled herself up
with a pretty affectation of alarm.
"What am I saying? O, I beg your
pardon! She looks as nice as can be—
she can be. It was you who looked put
out."

"I had reason to look it."

"No doubt—I mean, she must have
had some reason for letting you look
it."

"She could not help—"

"Poor thing—so weak? I mean,
bound to such a tyrant!"

"I give her her own way in every-
thing."

She flashed around on him with her
most provoking smile.

"How horribly tame of you!" she
said. "No wonder she has lost interest
in her—your looks!"

"After all," he said, "I didn't fol-
low you out here to talk of her."

"Well, then, suggest a topic—I'm
only waiting."

While she still waited she looked up
at the laden apple tree under which
they stood. She seemed to be select-
ing, with the eye of a connoisseur, but
it may have been the blue and white
patches of cloud-flecked sky seen
through the branches which held her
attention. He gazed at her. He had
been so gazing every available moment
during the brief week he had known
her, and always with the same sense
of pleasure in the picture she made.
It was true she was only the half edu-
cated, untidy, pleasure-loving daugh-
ter (the adjectives had been supplied
for him) of the improvident, comfort-
able farmhouse where he and his
mother and the girl he was engaged
to were staying as paying guests, but
he saw no reason in this why he should
not admire her for the qualities he did
not need to have supplied for him.

"I came out meaning to say a hun-
dred things to you," he said, at last,
"and I cannot think of one."

"I came out meaning to pick—well,
several, not hundreds quite, of apples,"
said she, "and I can't reach one."

"There is something I might do for
you," he said, seizing his opportunity,
or trying to seize it. For, try as he
would, neither could he reach an apple.

"I tell you what—that lowest
branch there; it has four beauties on
it. If you were to—" She looked up
at him, smiled, looked down again,
pensively up at the coveted branch,
with a sidelong glance like at him, and
then down once more. But she did not
conclude her sentence.

"If you would let me—if you'd only
let me lift you up," he said, suddenly
inspired, "you could reach them your-
self, couldn't you?"

"Ah! That would do it, wouldn't
it? And I want them so!"

"Then I may?"

"Certainly not! I'd rather go with-
out the apples!"

"I am much the stronger," he said.
"How if I seized you against your
will?"

"Why, I couldn't help that, could
I?" she asked. And the thing was
done in less time than it takes to tell.

But she had only picked one apple,
the nearest, when his lady love's voice
came to them through the trees, call-
ing him by name. And there was a
sharp note in her voice (like the taste
of an unripe apple) which told them
what she saw.

"If you put me down before I've
picked the four I'll never forgive you,"
said the lady of the apples; so he held
her till she had them all, though the
task was robbed of a full half of the
delights he had anticipated.

"Now," she said, when she was on
her feet again, "go quickly. O, poor
you!"

"She'll cast me off," he said.

"I should—if I were she!"

And then he turned in haste.

"But, if she does, come back to
me!" she called after him.

"Well—and what? Be quick!"

"And I'll give you a bite of an apple
—if there's any left!" she laughed.

* * * * *

The girl he was engaged to had seen
it all, she said, and forthwith re-
nounced her right to that connection.
She seemed to have seen even more

than all, considering what it amounted
to when she went over it in words.
Low tastes and the society of the ill-
bred, she told him, would be his ruin.
Then she tossed him over to ruin, de-
claring she would have none of him.

"You are free," she said (by no
means for the first time), "and I know
exactly how you will use your free-
dom."

"I hope you'll have the opportunity
of using yours as well," he said, stung
into retort at last.

"I might have known!" she cried.
"O, what I have been saved! Every
fresh face—"

"So few faces are fresh," he said;
and that was really unkind, for she had
a sallow complexion.

"I am not going to argue it any
more," she declared, having herself
talked the subject bare. "Go!"

And he went. But he was a gentle-
man, and previous to going he had
tried his best to soothe her annoyance,
even to frankly owning that—from her
point of view—she had cause for it.
He had tried to close his ears to the
echoing voice, his eyes to the laughing
face of the girl he had left under the
apple tree. He did all he could to
shut out the sweet, sudden vision of
freedom, of release from a captivity
which had always irked him. It was
not his fault in the present that his
past faults were accounted unpardon-
able. He only went when he was cer-
tain that he was powerless to rivet
his chains.

He was not a poetical young man,
but some verses the lady who had re-
linquished him was fond of quoting
came to him as he wandered back to
where the cause of the mischief (so he
devoutly hoped), still awaited him. He
waited, on his part, until he was quite
certain that she was there, until he
stood in front of her, and then he re-
peated a verse out loud:

"Where the apple reddens, never pry—
Lest we lose our Eden, Eve and I."

"So she has sent you adrift?" said
the girl seated under the apple tree.

"But Eve's all right."

He flung himself beside her.

"Eve's all right," he echoed.

"God bless her! You haven't finished
the apples?"

"No—you're just in time. Here's a
whole one left," and she passed it to
him. "That's the prettiest side," she
said, pointing; "you may bite it
there."

"Really?"

"It seems a ceremony befitting the
occasion," she said.

"There," he said, as he handed the
bitten apple back to her. "But I
knew what was good for me the mo-
ment I saw it, before I ate the fruit."

"You are not keeping closely to the
original," she said.

"Eve is all right!" he repeated,

"Dear, I love you! Am I?"

He bent towards her. They were so
close under the shelter of the old apple
tree that she could hear his heart beat
and he could hear hers.

Her cheeks were redder than the
apples, and there was a strange,
new note in her clear voice. "Wait,"
she said; "I thought I could deceive
you, but I can't. I saw her there be-
fore I let you—seize me."

He did not speak.

"I know she does not love you; she
almost said so. She said things about
you to me she never could have said
if she truly loved you. I believe she
loves some one else better. I must not
tell you why I think it, but I do."

Still he did not speak.

"I knew—I felt sure—that you did
not properly love her."

She waited a moment. "Can you
forgive me?" she asked, softly.

"If love prompted you?"

"I suppose that was it," she ad-
mitted. "Love and apples."—L.
Parry Truscott in Chicago Tribune.

"YOU, WILLIAM!" exclaimed the
old man, "what you doin' on dat white
man's fence? Ain't you 'fraid you'll
fall off?" Then, after a moment's
thought, the old man resumed: "But
ef you does fall off you might ez well fall
on de side whar de watermillions is.
You hear me, don't you?"

Reflections on Farm Life.

Written for the PACIFIC RURAL PRESS by
ERNST DOLGE, Lamanda Park.

In farm life we find a strong contrast
between the opportunity of developing
the character to the highest degree
and of letting it slump to a nonentity.
There seems to be no check on either
side. The individual is given full sway
—it requires but the effort to make a
success of the situation. And we find
among the characters on our farms the
noblest and grandest as well as the
most undecided, selfish and penurious
individuals.

The condition which prompts, or
rather allows, this range of individual
development is freedom of thought and
action, which we prize as our inde-
pendence. The joy of independence is not
the new liberty of spending our lives in
idleness and ease. Surely, there is
something sweeter in the liberty to
create, to mature and to develop the
product of an active mind by thought-
ful, persevering diligence.

It is this point that especially a
young man ought to consider. If
he feels any individuality, if he has
vague conceptions of achievements
possible for him, it is his duty to nurse
these gifts by hard work and protect
them by careful study. If he is sincere
in his ambitions, his endeavors and his
faith in the world, he is less likely to
fail in the execution of his plans and
suffer disturbance of his peace of mind
if he will abide with nature than if he
puts himself into the forced and gen-
erally strained conditions of the city.

Every observation in nature acts as
a spur to a greater endeavor, to still
harder and more concentrated effort.
The simplicity of the surroundings
have their influence; and everywhere
we see the fruits of labor. Simplicity
provides a clear understanding and
genuineness a faith in the fruits of
labor. They rob life of its emptiness
and point to opportunities.

We find in history and biography,
which are from this standpoint virtu-
ally one, that the principal distinctions
of the men who were developed in the
country are sincerity of purpose and
self-reliance. These men were—and
are to-day—the children of nature,
who recognize no power that can sway
them from their convictions, or deprive
them of their right to live and
act. They dislike all the pomp and
show that serve only to hide the real
man; they present themselves for
what they are and snap their fingers
at the judgment of others. These are
our truly successful men.

True success brings with it peace of
mind, and constitutes greatness when
it assumes large proportions. When
success is but the shadow of ill-gotten
gain its reward is as uncertain as its
place. The truly successful man gen-
erally creates—and does the work laid
out for him in one way or another.
The mean never create—they absorb;
they rob the great in a moment of ex-
haustion, and then parade their plun-
der to win for them the title of "suc-
cess."

Many of the world's greatest men
received no true recognition in their
time—they were not understood. Co-
lumbus, Copernicus, Napoleon and the
hundreds of others who have done a
century's work to advance the world.
On the other hand some of our most
successful men are of the meanest
type.

Greatness does not need special rec-
ognition.

Full many a flower is born to blush un-
seen
And waste its sweetness on the desert air.

Success is worth our sacrifices for
the peace of mind it brings. The ap-
plause that sometimes follows is the
least attraction it possesses, for not in-
frequently is this but little less than an
attempt to get a part of it.

A blot on the past, an eye on the
present, a plan for the future, and dili-
gence throughout are the guide-boards
to success.

"WHAT makes the price of beef so
high?" "Critters can't get anything
to eat; pastures are all cut up into golf
links."

The Old Black Bass.

A fisherman on Lak San Claire,
'Bout six mile off from shore,
Fished hard for one, two, three, four hour;
By an' by he fished some more.

Some time he fished with old dry bait,
Some time he fished with wet—
He give the dry bait to the fish,
The wet bait—nit! you bet!

Long time some fish did never come,
Then one, two, three passed by;
They smell of that old dead, dry bait
And wink the other eye.

By an' by one great big bass comel ong,
'Bout five, six, seven pound weight,
So old he neither smell nor see,
And ate that old, dry bait.

The fisherman stood very still
And reeled out yards of line—
He worked that poor old blind black bass
So very, very fine.

By an' by the fish began to pull,
By an' by he pull some more,
And then was fun in Lak San Claire,
'Bout six mile out from shore.

The fish he plunge like one mad horse,
And then he pulled like ten—
He towed that boat nine miles an hour—
Big boat and four big men.

He pulled like bass 'bout six feet long,
May be he be 'bout seven;
May be if not pulled out right quick,
He'll grow to be 'bout 'leven.

By an' by they pull that bass half out,
By an' by they pull him more,
And Lak San Claire fell four, five feet,
'Bout six mile off from shore.

The Lime Kiln Crossing got so low
The boats they could not pass;
And Dan he say the river fell
When he pulled out that bass.

The Choice of Summer Clothing.

People dress for a great variety of purposes: Propriety, protection from weather, to present an attractive appearance, because it is fashionable and so on. But, after all, health and comfort are the two most important considerations. Everything else—good looks and conformity to the prevailing style, for instance—should be subordinate to these. And it is hardly necessary to add that what would promote health and comfort in winter is not necessary thereto in summer. Probably at all times of year the majority of people wear too much clothing, and this is particularly true in hot weather. Still, it is not so much the weight as the character of clothing that counts.

The two important points to bear in mind at this season are protection against sharp temperature changes and a good circulation of air between the skin and underclothing. It is possible even in summer to take cold. And it is also possible to suffer needlessly from warmth. The Philadelphia Medical Journal offers the following excellent suggestions:

"Too much clothing keeps the body overwarm and promotes free sweating, thus the skin is most of the time kept covered with moisture, in a condition in which it reacts most readily to changes of temperature and is likely to become suddenly chilled. The frequent summer coughs and colds, most of them, arise in this way. Besides lightness of clothing, the ventilation, if we may use that term in this sense, is important. Goods of loose texture, loosely fitting and without constricting collars or bands, allow free circulation of air and escape of perspiration vapor. Clothing which is not properly ventilated retains a layer of steam-like perspiration which gives a feeling of oppression. The sweater is an example of a properly ventilated garment, and every athlete knows how warm and comfortable a sweater is. Its loose mesh permits of free escape of perspiration, the skin dries rapidly, but without becoming cold.

"Very little clothing is needed to maintain the bodily temperature in summer, but it is necessary to protect against sudden changes in our changeable climate. Wool, cotton, linen and silk all have their enthusiastic advocates. Experience has very certainly shown that woollen garments are better adapted to protect those whose occu-

pations subject them to very sudden and considerable changes of temperature, especially if accompanied with much exertion. But it is unfortunate that practically no light, loose mesh woollen undergarments are to be had that have any durability; and thus for persons engaged in sedentary occupations the lighter cotton and linen mesh are better adapted. For both cleanliness and health very frequent changes of underwear are needed, thus keeping the skin in the very best condition to eliminate as much waste matter as possible, and this is fully as important as the material of the garment worn."

A First Meeting With Artemus Ward.

An article by James F. Ryder on Artemus Ward, in the Century, contains the following:

On going into the Cleveland "Plain Dealer" editorial rooms, one morning, I saw a new man, who was introduced to me as Mr. Browne.

He was young, cheerful in manner, tall and slender, not quite up-to-date in style of dress, yet by no means shabby. His hair was flaxen and very straight; his nose, the prominent feature—quite violently so—and with a leading to the left. His eyes were blue-gray, with a twinkle in them; his mouth seemed so given to a merry laugh, so much in motion, that it was difficult to describe.

It seemed as though bubbling in him was a lot of happiness which he made no effort to conceal or hold back. When we were introduced he was sitting at his table writing. He gave his leg a smart slap, arose, shook hands with me, and said he was glad to meet me. I believed him, for he looked glad all the time. You could not look at him but he would laugh. He laughed as he sat at his table writing. When he had written a thing which pleased him he would slap his leg and laugh.

I noticed that George Hoyt and James Brokenshire at their tables were pleased with merriment and indulged in broad smiles. As I bade him and the others good morning, he said, "Come again, me liege." I thanked him, said I would, and went my way, thinking what a funny he fellow was.

Within a month thereafter appeared in the columns of the "Plain Dealer" a funny letter signed "Artemus Ward." The writer said he was in the show business, had a trained kangaroo, "a most amosin' little cuss," some "snaix," and a collection of wax figures, which he called a "great moral show." As he was coming to Cleveland to exhibit, he made a proposition to the proprietor that they "scratch each other's backs"—the publisher to write up the show vigorously, and the showman to have the handbills printed at his office and give him free tickets for all his family. So I found my young friend of the gurgle and hay-colored hair to be an embryo humorist just bursting into bloom. Artemus, as from that time he was best known, soon had a city full of friends, myself and family among them.

"Did any of the inhabitants escape with his life?" inquired the man who wants harrowing details. "I didn't stop to ascertain," answered the man who is harrowingly exact. "It struck me that if anybody escaped without his life there wasn't much use in his escaping, anyhow."

PROF. BLINKERS—"I hope you did not find my lecture too technical, Miss Baynes." Miss Baynes (with pride): "Oh, no, professor. I was able to follow it all." Prof. Blinkers: "I am glad of that, as I tried to make it intelligible to the meanest comprehension."

THE CALLER had been descanting on the advantages of cork soles as a preventive of colds in wet weather, and the expression had caught Kitty's ear. "Mamma," she said after the visitor had gone away, "how can anybody with a cork soul ever go to heaven?"

THE PESSIMIST—"The longer I live in the world the worse it seems to get." The Optimist: "Oh, well, don't let a little thing like that worry you. Perhaps it will be better after you get out of it."

Restoration of Drowning Persons.

The following simplified method for the restoration of drowning persons, and of those who have lost consciousness through asphyxia or any other cause, was developed by Dr. J. V. Laborde of the School of Anthropology in Paris. It has proved efficacious in many cases. In one cited, of a child who had been submerged for nearly fifteen minutes, the return of breathing was accomplished in ten minutes. The translation here given is from a leaflet which Dr. Laborde distributes among his pupils, and its publication now, at the beginning of the season, when accidents of the water are common, is believed to be timely.

1. As soon as the drowning man has been taken from the water, force open his mouth. If the teeth are clinched, separate them with the fingers, or by means of any hard object—e. g., a piece of wood, the end of a cane, the handle of a knife, of a spoon, of a fork.

2. Firmly seize between the thumb and the first finger of the right hand the end of the tongue, using your handkerchief, or any piece of linen, to prevent the tongue from slipping; then repeatedly, rhythmically, and with decision, pull it from the mouth, and relax it alternately—at the rate of at least twenty times a minute, imitating the cadenced movements of expiration and inspiration.

3. At the same time introduce, far back into the throat, the first finger of the left hand, pressing upon the base of the tongue, so as to induce vomiting, and thus free the stomach of the water or food which encumbers it.

4. This treatment, the most efficacious known method of bringing back the respiration, must be begun without the slightest delay, and persistently continued for a half hour, or more. At the same time all the usual remedies must be applied. Most important are the removal of the clothing, friction over the whole body, pressure upon the anterior part of the chest, the restoration of the bodily heat, and, where it is possible, the application upon the region of the heart of compresses of very hot water.

The same method may and should be applied, in the same manner, in all cases of asphyxia and of syncope (loss of consciousness), from whatever cause. —Harper's Weekly.

Digestion of New Versus Stale Bread.

New bread is well known, observes a writer in the Lancet, to be less digestible than stale bread, although it need not be so. There can be no question, however, of the vastly superior flavor of the former, and hence the preference of many people for hot rolls for breakfast. So far the palate would appear not to be a safe guide to digestion. Hot rolls, however, when masticated properly, should not offer any difficulty to the digestive organs. A slice of stale bread on being broken with teeth resolves into more or less hard, gritty particles, which, unless they were softened by the saliva, would be almost impossible to swallow. The particles would irritate the throat and the gullet. The fact is, therefore, that man is compelled thoroughly to masticate and to impregnate stale bread with saliva before he swallows it. This act, of course, partially digests the bread, and thus makes it in a fit state for digestion and absorption farther on in the alimentary tract. This is why stale bread appears to be more digestible than new bread. New bread, on the contrary, is soft, doughy, or plastic, and there appears to be no necessity to soften it with saliva, hence it escapes the preliminary digestive action of the ptyalin of the saliva. New bread, in other words, is in reality "bolted," and "bolting" accounts for many of the ills arising from dyspepsia.

ANXIOUS OLD LADY—"I say, my good man, is this boat going up or down?" Surly Deckhand: "Well, she's leaky old tub, mum, so I shouldn't wonder if she was going down. Then, again, her b'ilers ain't none too good, so she might go up!"

DOMESTIC ECONOMY.

Domestic Hints.

FARINOSE CUSTARD.—Into one pint boiling milk stir slowly one tablespoonful farinose, add one and one-half tablespoonfuls sugar and a pinch of salt. After removing from fire stir in two lightly beaten eggs; turn into wet moulds. Serve with any sauce desired.

FRIED CHICKEN WITH TARTAR SAUCE.—Cut up a chicken as for fricassee; season with salt, pepper and nutmeg; dip each piece in melted butter and breadcrumbs. Fry in deep fat. Tartar Sauce—Make a mayonnaise dressing, and add to it one finely chopped gherkin, one tablespoonful chopped parsley and a few capers.

SCRAMBLED EGGS.—Economical scrambled eggs are best made by putting some dripping or butter in a saucepan. Let it melt, then beat two eggs, pour them in, add a breakfast cupful of fine breadcrumbs, pepper and salt and a tablespoonful of milk. Stir well until the eggs are cooked to taste. Spread on three rounds of toast or bread fried in dripping.

APPLE TAPIOCA.—One-half cup pearl tapioca, three apples pared and cored, one pint water, one-half teaspoon salt, one-fourth cup sugar, cinnamon and grated nutmeg. Cover the tapioca with one and one-half cups warm water, and soak five or six hours, stirring now and then. Pack the apples in a deep dish, filling the cores with sugar, and pour over them the tapioca, water, cinnamon and nutmeg. Bake one hour, or till the apples are well cooked. Serve hot with hard sauce or cream.

FROZEN PUDDING.—Prepare a custard with a quart of rich milk, a pint of cream, a pound of sugar and the yolks of eight eggs. Set it on the fire and stir constantly until it begins to thicken; remove from the fire, and when it is cold add three tablespoonfuls of brandy, one teaspoonful of vanilla, one teaspoonful of almond extract. Put in the freezer, and when partially frozen add a quarter of a pound of stoned raisins that have been cooked a little in water to soften them, a quarter of a pound of currants, a quarter of a pound of citron cut fine. Freeze smooth and put in a mould, and pack in ice and salt.

Hints to Housekeepers.

To use oil of red cedar as a moth preventive pieces of cotton batting should be wet with the oil and placed in closets and drawn or tied in the mouths of bags holding garments or bedding.

Nightgowns for summer wear are cut square at the neck and have loose-fitting elbow sleeves. Many of these are finished with a beading of embroidery through which a high-colored satin ribbon is drawn, and the usual edging of embroidery is dispensed with.

The latest thing in separate skirts is close fitting to the knees and finished with a wide graduated accordion plaited flounce. In skirts of light colors, the portion where the flounce joins the skirt is finished with white or ecru lace in medallion or serpentine design.

A writer in "What to Eat" gives a recipe for frozen fruit pudding as follows: Four eggs, half a cupful of sugar, a rounding tablespoonful of cornstarch, a quart of milk, a cup of either strawberry or cherry preserves, a fourth of a pound each of raisins and white walnuts and vanilla to flavor. To save time it is better to seed and cut the raisins and chop the nuts the day before. Beat the yolks of the eggs and the sugar until light, add the cornstarch dissolved in a little cold milk, the remaining milk heated to boiling, and cook over hot water for fifteen minutes, stirring constantly until thickened, then occasionally. When the mixture is cold add the preserves, raisins and nuts and flavor with vanilla. Freeze as ice cream, and when half frozen add a meringue made of whites of the eggs beaten stiff, and slowly added to them a fourth of a cupful of sugar and water each, cooked to a thick syrup. Turn out at serving time, and garnish with whipped cream, preserves and walnuts.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Aug. 6, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	69 3/4 @ 70 1/4	69 1/4 @ 70
Thursday.....	70 1/4 @ 70 3/4	70 1/4 @ 70 3/4
Friday.....	69 3/4 @ 70 1/4	68 3/4 @ 69 1/4
Saturday.....	69 3/4 @ 70 1/4	68 3/4 @ 69 1/4
Monday.....	71 @ 69 3/4	69 3/4 @ 68 3/4
Tuesday.....	70 3/4 @ 69	68 3/4 @ 68 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	31 1/4 @ 32 1/4	30 3/4 @ 31 1/4
Thursday.....	32 1/4 @ 31 1/4	31 1/4 @ 30 3/4
Friday.....	31 1/4 @ 32 1/4	30 3/4 @ 31 1/4
Saturday.....	32 1/4 @ 31 1/4	31 1/4 @ 30 3/4
Monday.....	33 1/4 @ 32 1/4	31 1/4 @ 30 3/4
Tuesday.....	32 1/4 @ 31 1/4	30 3/4 @ 30 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	81 13 3/4 @ 13 3/4	81 16 1/4 @ 15 1/4
Friday.....	1 13 3/4 @ 12 3/4	1 15 1/4 @ 15 1/4
Saturday.....	1 13 @ 13 3/4	1 15 1/4 @ —
Monday.....	1 13 @ 12 3/4	1 15 1/4 @ 15 1/4
Tuesday.....	1 12 3/4 @ 12 3/4	1 15 1/4 @ 15 1/4
Wednesday.....	1 12 3/4 @ 13	— @ —

WHEAT.

Market has not shown much activity in this center since last review, nor has it been noteworthy for firmness. Most of the business is being done at interior points, and this enables operators to bear the market locally much more successfully than if compelled to do their purchasing at this center. With inactivity prevailing, quotations are much more readily fixed in favor of buyers than when purchasing is lively and there is open competition to secure wheat. Most seasons there is considerable buying done in the interior, not only by dealers but by speculative operators, who stand between the producer and the consumer to exact their pound of flesh in the shape of profit, thus increasing the expense to the consumer and reducing the remuneration to the producer. Once in a while the game does not prove a winning one, but as a rule the growers are chiseled out of a goodly share of the profits which should be theirs. Seldom have there been evidences of heavier buying in the interior than this season. Only six wheat cargoes were cleared from San Francisco the past month, the aggregate being 17,400 tons, valued at \$405,800. For July of last year there was much the same light showing, eight cargoes clearing with a total of 18,250 tons, valued at \$363,000. There is this difference, however, that with the shipment of nearly 1,000 tons less wheat than for corresponding month last year, we have a gain in value of over \$40,000. Only once in the past seven years have July shipments of wheat proven lighter than during the present and the last season. The freight market is barely steady, desirable iron ships not being quotable over 27s 6d to Europe, usual option as to final destination.

California Milling.....	1 17 1/4 @ 21 1/4
Cal. No. 1 shipping, alongside.....	1 12 1/4 @ 15
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 07 1/4 @ 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03
Liv. quotations.....	68 0/4 @ 68 0/4 d	68 3/4 d @ 68 3/4 d
Freight rates.....	37 1/4 @ 40	25 @ 27 1/4 s
Local market.....	95 @ 98 1/4	1 12 1/4 @ 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.13 1/2 @ 1.12 3/4.

May, 1903, delivery, \$1.16 1/2 @ 1.15 1/4.

Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.12 1/2 @ 1.13; May, 1903, — @ —.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on August 1st and July 1st:

Tons—	August 1st.	July 1st.
Wheat.....	*41,471	37,861
Barley.....	†40,547	10,966
Oats.....	5,862	3,271
Corn.....	1,622	891

*Including 20,968 tons at Port Costa, 19,942 tons at Stockton.

†Including 30,825 tons at Port Costa, 5,970 tons at Stockton.

Stocks of wheat in Call Board ware-

houses on 1st inst. show an increase of 3,610 tons for the month of July. A year ago there were 70,868 tons wheat in Call Board warehouses.

FLOUR.

Values continue at much the same range as for some time past, and are in the main lower than warranted by present cost of wheat, being kept so through cutting competition. This is nearly always the case with flour in all prominent trade centers. Interior mills realize a profit as a rule on the flour they sell in their immediate vicinity, but the surplus has to be disposed of elsewhere, and this often goes at less than actual cost.

Superfine, lower grades.....	2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

There has been little change in the quotable range of prices for this cereal since last review, but on feed descriptions the tendency was to slightly lower prices than have been lately current. This is partly due to the relatively lower figures ruling on oats. For high-grade barley the market is moderately firm at prevailing values, with prospects favorable for a heavy foreign demand. One steamer cleared this week with a part cargo of 4275 tons barley for Belgium, and 1200 tons went forward by another steamer for New York. Several of the sailing vessels now loading are taking barley as whole or part cargo.

Feed, No. 1 to choice.....	91 1/4 @ 92 1/4
Feed, fair to good.....	87 1/4 @ 90
Brewing, No. 1 to choice new.....	95 @ 97 1/4
Brewing, old.....	1 00 @ 1 02 1/4
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

OATS.

Prices for this cereal continue on a comparatively low plane, especially for common qualities, a large proportion of present offerings being of this description. Holders of high-grade oats are not in most instances making any special effort to realize at present, expecting to be able to do better later on. Spot stocks are increasing, being nearly 6000 tons on 1st inst., or nearly double the quantity held here a month ago.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 20 @ 1 22 1/4
White, poor to fair.....	1 07 1/4 @ 15
Gray, common to choice.....	1 10 @ 1 17 1/4
Milling.....	1 25 @ 1 30
Surprise, good to choice.....	1 17 1/4 @ 25
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 12 1/4

CORN.

Trade in this cereal is of the same slow order as for some time past, prices being at too high levels for consumers to take hold freely. Spot stocks are not very heavy, but are showing some increase. Supplies are largely in few hands. There is little other than asking figures upon which to base quotations.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 42 1/4 @ 1 47 1/4
Small Yellow.....	1 45 @ 1 50

RYE.

A shipment of 1800 tons went forward this week by steamer for Belgium. Not much doing on local account. Market is moderately firm at figures quoted.

Good to choice.....	85 @ 90
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BUCKWHEAT.

Same inactivity previously noted is being experienced. None arriving and no special inquiry. Values are for the time being wholly nominal.

Good to choice.....	1 55 @ 1 70
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BEANS.

The crop East is not likely to be large or of good quality and this is imparting a firmer tone to the market here for white beans, although there are no evidences of much doing, asking figures of principal holdings being relatively higher than quotable values in Eastern centers. Some efforts are being made to contract for coming crop of white beans, \$2.25 being reported bid for Lady Washingtons in Sacramento river section. In colored beans there is a fair movement, mostly in Pinks and Bayos, values for which are being well maintained at the prevailing range. Limas are being firmly held, with spot stocks of light volume.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 55 @ 2 65
Lady Washington.....	2 55 @ 2 65
Pinks.....	2 15 @ 2 25
Bayos, good to choice.....	3 00 @ 3 15
Reds.....	2 25 @ 2 50
Red Kidney.....	3 00 @ 3 25
Limas, good to choice.....	3 85 @ 3 95
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

There are not enough Niles Peas offering at present to enable giving wholesale quotations for same; in fact, the market is practically bare of domestic product of this variety. Green Dried or Blue Peas are in more than ample stock for immediate needs, and market for these is showing no noteworthy firmness.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

Dullness is the chief feature in the local wool market, due to absence of noteworthy offerings and not to lack of demand. The Spring clip has been virtually disposed of, and not enough Fall has yet arrived to enable giving quotations for the same. The market is firm in tone, more particularly for bright and free wools, which are easier to sell than to secure at full current quotations. It is probable that values for Fall wool will be sufficiently determined in about a week to enable quoting the same.

SPRING.

Humoldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	15 @ 16
Oregon Valley, coarse to medium.....	13 @ 14
Eastern Oregon, choice.....	13 @ 15
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

The local market is showing very little life, there being few hops here at present, and these virtually all in the hands of jobbers. The market is quoted at 20c @ 23c for 1901 hops, these being jobbing rather than wholesale figures. New to arrive are quoted up to 23c and higher, but there is no evidence of any trading. Growers as a rule are content to wait, and would probably have to if they insisted on extreme prices now talked of. A New York review quotes Pacific Coast 1901 hops at 21c @ 24c, and Eastern at 21c @ 26c, at same time stating in remarks that "if dealers went on the market to buy they could not secure the more desirable growths at the figures given; on the other hand, if growers sought to realize on stock promptly, quotations would doubtless be found extreme. The strength of the position lies mainly in the very small supplies left unsold. Crop prospects have not changed much during the week. Weather conditions have not been favorable and the yards have shown less improvement than was looked for. English advices estimate a possible yield of 440,000 to 450,000 cwt., with less vermin than of late. On the Continent of Europe the outlook is very bright."

HAY AND STRAW.

Receipts of hay have continued of quite liberal proportions, and had there been any special selling pressure exerted, prices would have very likely dropped to lower levels than have been lately current. Much of the hay, however, represented purchases made in the interior, and in some instances was sold so close to cost that it was a question whether a new dollar was replacing the old one. The quality of offerings continues of decidedly good average.

NEW.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	5 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3 bale.....	40 @ 50

MILLSTUFFS.

Bran and Middlings are offering at a moderate decline from figures lately current. Stocks are showing some increase, with the demand moderate. Rolled Barley and Milled Corn were held about as last quoted.

Bran, 1 ton.....	19 00 @ 20 00
Middlings.....	22 00 @ 24 00
Shorts, Oregon.....	20 00 @ 21 50
Barley, Rolled.....	19 00 @ 20 00
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

Market for the several kinds of seeds quoted herewith shows the same inactive condition previously noted. Quotable values remain nominally as before. Stocks are in the main too light to admit of other than small jobbing operations.

Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 00

Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 1 1/2
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

The Grain Bag market is quiet and easy in tone. Holders would likely grant material concessions to effect free transfers, but the opportunity to unload in large quantities does not now present itself. In Fruit Sacks there is a tolerably active movement, with market steady, there being no changes to record in quotations.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Labor troubles in the local tanneries are causing the Hide and Pelt market to be slow and unsettled and temporarily against sellers. Tallow does not lack for custom and is commanding fully as good figures as have been lately current. Purchases are largely on export account.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 @ —
Light Steers, under 48 lbs.....	9 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 1/2 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	9 @ —	7 1/2 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	9 @ —	8 @ —
Wet Salted Veal.....	9 1/2 @ —	8 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	1 25 @ —
Dry Horse Hides, large.....	1 75 @ —	1 50 @ —
Dry Horse Hides, medium.....	1 50 @ —	1 25 @ —
Dry Horse Hides, small.....	1 25 @ —	1 00 @ —
Dry Colts' Hides.....	50 @ —	40 @ —
Pelts, long wool, 3 skin.....	80 @ —	60 @ —
Pelts, medium, 3 skin.....	50 @ —	40 @ —
Pelts, short wool, 3 skin.....	30 @ —	20 @ —
Pelts, shearling, 3 skin.....	15 @ —	10 @ —
Deer Skins, best summer.....	35 @ —	30 @ —
Deer Skins, good medium.....	— @ —	20 @ —
Deer Skins, thin winter.....	— @ —	10 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	4 1/2 @ —
Tallow, No. 2.....	4 1/2 @ —	4 1/4 @ —
Goat Skins, perfect.....	30 @ —	27 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

There is not much honey offering from any quarter, and market is decidedly against buyers, particularly for choice to select Comb, which is in fair request on local account. Extracted has to depend on shipping demand to a considerable extent, and to secure shipping orders prices have to be regulated by values current in other centers. While there is not much Extracted offering, buyers have not so far shown disposition to take hold at any material advance on figures lately ruling.

Extracted, White Liquid.....	6 1/4 @ —
Extracted, Light Amber.....	5 @ —
Extracted, Amber.....	4 1/4 @ —
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESWAX.

Very little arriving or in stock. Market is firm at the quotations.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is ruling steady, with supplies of only moderate volume. There is nothing to indicate that materially easier figures will be soon experienced. Mutton is offering in sufficient quantity for the immediate demand, values remaining without quotable change. Veal is in light receipt and market firm for choice. Hogs are commanding much the same figures as last quoted, with no excess of offerings, the demand for fresh pork absorbing the bulk of present supplies.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 7
Hogs, small, fat.....	6 1/2 @ 6 1/2
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	8 @ 8 1/4
Veal, small, 1 lb.....	8 @ 9 1/4
Veal, large, 1 lb.....	7 @ 8 1/4
Lamb, spring, 1 lb.....	9 @ 9 1/4

POULTRY.

Market has not changed materially in general tone or in quotable values since

last report. Much of the poultry arriving lately has shown poor condition, which has naturally operated against its sale. To make matters worse, the weather has been too warm for consumers to purchase freely. The demand which existed was principally for Chickens, with large and fat most sought after. The latter were salable above quotations, but were in too light receipt to warrant values for the same being included in the figures below given.

Turkeys, dressed, choice.....	@—
Turkeys, alive, Hens, # lb.....	13 @ 14
Turkeys, alive, Gobblers, # lb.....	13 @ 14
Hens, California, # dozen.....	4 00 @ 5 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	4 00 @ 5 50
Fryers.....	3 50 @ 4 00
Broilers, large.....	2 75 @ 3 00
Broilers, small to medium.....	2 25 @ 2 50
Ducks, old, # dozen.....	2 50 @ 3 00
Ducks, young, # dozen.....	3 00 @ 4 00
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 25 @ 1 50
Pigeons, old, # dozen.....	1 75 @—
Pigeons, young.....	1 50 @—

BUTTER.

Choice to select fresh is meeting with a moderately firm market, with no heavy arrivals of this sort. Much of the butter now being produced is showing the defects common to this time of year. For defective fresh the market is slow and weak, most consumers taking cold storage butter in preference to poor fresh. Eastern lard butter is offering in moderate quantity and is selling mainly for cooking and pastry purposes.

Creamery, extras, # lb.....	25 @—
Creamery, firsts.....	24 @—
Dairy, select.....	23 @—
Dairy, firsts.....	22 @—
Dairy seconds.....	18 @ 20
Mixed store.....	17 @ 18

CHEESE.

Market is showing a healthy tone. There is a fair demand at prevailing values, with offerings of only moderate volume. Particularly is mild flavored new of high grade selling to advantage.

California, fancy flat, new.....	11 @—
California, good to choice.....	10½ @—
California, fair to good.....	@—
California, "Young Americas".....	11 @ 12

EGGS.

Arrivals of domestic are showing marked decrease, and the proportion of offerings of choice to select is light, as is customary at this time of year. Some extra choice are selling above quotations. Of common grades of fresh, however, there are more than enough, such having to come into competition with cold storage and also with Eastern eggs. Several carloads of the latter, mainly seconds, are now on the market.

California, select, large, white and fresh.....	25 @—
California, select, irregular color & size.....	22 @ 24
California, good to choice store.....	19 @ 21

VEGETABLES.

Onions were in increased request, mainly for shipment, and market inclined in favor of sellers, but quotable values were at no higher range than last noted. Tomatoes were in less excessive supply than preceding week, and market showed more firmness, although quotable values remained at a rather low range. Green Peas continued to be offered sparingly, and for choice to select qualities the market was firm at full current rates. In quotable values or the general tone of the market for other vegetables now offering there were no radical changes to record, but the condition as a whole was favorable to the buying interest.

Asparagus, # box.....	@—
Beans, Lima, # lb.....	3 @ 4
Beans, String, # lb.....	2 @ 3
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @—
Corn, Green, Alameda, # crate.....	75 @ 1 25
Corn, Green, # sack.....	50 @ 1 00
Cucumbers, # large box.....	30 @ 50
Egg Plant, # large box.....	40 @ 75
Garlic, # lb.....	2 @ 2½
Onions, Yellow Danver, # cental.....	50 @ 65
Onions, New Red, # cental.....	@—
Okra, Green, # box.....	75 @ 1 00
Peas, Sweet garden, # lb.....	3 @ 4
Peas, good to choice, # sack.....	@—
Peppers, Green Chile, # box.....	40 @ 60
Peppers, Bell, # box.....	40 @ 65
Rhubarb, # box.....	@—
Summer Squash, Bay, # large box.....	35 @ 50
Tomatoes, # small box.....	@—
Tomatoes, River, # large box.....	75 @ 1 00

POTATOES.

During the greater part of the week the market has been slow and against sellers, with spot offerings not particularly large, but more than enough to cause the market to display a weak feeling. For several days past the tendency has been to a better condition of affairs, not so much in quotable values as in the general state of the market, there being a fairly active inquiry for shipment, with prospects of considerable movement outward being experienced in the near future.

Burbanks, Salinas, # cental.....	75 @ 1 00
River Burbanks, good to select, #	

cental.....	30 @ 75
Early Rose.....	30 @ 40
Garnet Chile.....	50 @ 75

The Fruit Market.

FRESH FRUITS.

Apricots did not arrive so freely as for several weeks preceding, the season for this fruit being well advanced. Prices showed no radical improvement, however, the demand being on the decrease, and only for very best quantities was there any display of firmness. Apples were in increased supply, and market for this fruit was easier in tone, especially for other than choice to select four tier, desirable for shipment. While latter sort were in fair request, they did not command quite as good figures as had been ruling. Bartlett Pears were in fair receipt, mainly from Sacramento river section, and market for other than most select lacked firmness, being decidedly against sellers where this quality of offerings was particularly defective. Peaches arrived rather freely and went at about as low values as preceding week, both in bulk and free boxes. Plums, Nectarines and Prunes made a fairly liberal display. A few Plums of select variety and fine quality, such as Burbank, Wickson and Simoni, brought tolerably good figures, but prices were in the main low and unsatisfactory, especially for other than the most select stock. Figs were scarce and market favored sellers, although not many would have been required to satisfy the most urgent demand. Grapes are not yet making much of a showing, but arrivals are on the increase, and the quality of offerings is improving. While prices averaged a little lower than previous week, the market for choice to select was fairly active, with full current figures in the main realized. Watermelons, Cantaloupes and Nutmeg Melons were in liberal receipt and brisk request, the quotable range of values showing little fluctuation from figures last noted. Berries of most kinds in season arrived more sparingly than for some weeks preceding, and prices were in the main at a higher range than last quoted. Longworth Strawberries were practically out of stock most of the week.

Apples, # fancy, 4-tier box.....	1 00 @—
Apples, good to choice, # 50-lb. box.....	60 @ 90
Apples, common to fair, # 50-lb. box.....	30 @ 50
Apricots, Royal, # crate.....	40 @ 60
Apricots, # ton.....	8 00 @ 20 00
Cantaloupes, # crate.....	1 00 @ 1 75
Cherries, Black, # box.....	@—
Crabapples, # small box.....	25 @ 40
Blackberries, # chest.....	2 0 @ 4 00
Raspberries, # chest.....	6 00 @ 9 00
Currents, # chest.....	@—
Figs, 1-layer box, 40/75; 2-layer.....	75 @ 1 25
Grapes, Fontainebleau, # crate.....	50 @ 75
Grapes, Muscat, # crate.....	75 @ 1 00
Grapes, Seedless, # crate.....	75 @ 1 00
Logan Berries, # chest.....	4 00 @ 5 00
Nectarines, Red, # box.....	50 @ 75
Nectarines, White, # box.....	30 @ 60
Nutmeg Melons, # crate.....	50 @ 1 00
Peaches, # box.....	25 @ 50
Peaches, # basket.....	20 @ 40
Peaches, in bulk, # ton.....	10 00 @ 20 00
Pears, Bartlett, No. 1, 40-lb. box.....	60 @ 90
Pears, common, # box.....	30 @ 50
Plums, choice large, # box or crate.....	40 @ 65
Plums, Green Gage, # ton.....	10 00 @ 15 00
Plums, small, # box.....	25 @ 40
Prunes, Tragedy, # crate.....	30 @ 50
Strawberries, Longworth, # chest.....	8 00 @ 10 00
Strawberries, Melinda, # chest.....	3 00 @ 6 00
Watermelons, # doz.....	1 00 @ 3 00
Whortleberries, # lb.....	7 @ 8

DRIED FRUITS.

A prominent feature of the week in the dried and evaporated fruit trade was the initial arrivals of Peaches and Pitted Plums. No heavy quantities have yet been received, but prospects are favorable for spot stocks and offerings of both descriptions being of liberal proportions at an early day. The crop is a little later than usual. It will be probably a week or ten days yet before Peaches can be forwarded outward in carload lots. Some sales of Peaches are being made within range of 5@5½c in carload lots, Aug.-Sept. delivery. Dealers are quoting Pitted Plums at 5@6c, as to quality, but no business of consequence has been yet effected in this season's output. Apricots are being offered freely and there is considerable outward movement, one steamer taking this week 287,613 lbs. of this fruit for France. While the Apricot market presents an easier tone in consequence of the rather heavy offerings, there are no changes in quotable values and the tendency in favor of buyers is more on common grades than on choice stock. Apples are arriving in moderate quantity and there is a fair demand for immediate deliveries at 8@8½c for good to choice evaporated in boxes, and 4@5c for sliced in sacks, but lower prices are looked for after the current month. New York apples are being quoted in the Eastern market at 7c for prime, Oct. delivery, ½c less for Nov., these figures being slightly higher than lately asked by speculative dealers. Prunes are inactive, buyers and growers being apart in their views. There are few

offering under 3c for the four sizes. Bids of some dealers have been advanced slightly, but are still sufficiently under asking prices to check trading for the present.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	8 @ 8½
Apricots, Royal, good to choice, # lb.....	5 @ 6
Apricots, Royal, fancy.....	7 @ 7½
Nectarines, # lb.....	@—
Peaches, unpeeled, choice.....	5 @ 5½
Peaches, peeled, in boxes.....	@—
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6
Prunes, 4 sizes, in bags, 2½@3c; 50-60s, 4@4½c; 60-70s, 3½ @ 3¾c; 70-80s, 3 @ 3¾c; 80-90s, 2½ @ 2¾c; 90-100s, 2c @ 2¼c; these figures for 1901 crop.	

COMMON SUN-DRIED.

Apples, sliced.....	4 @ 5
Apples, quartered.....	@—
Peaches, unpeeled.....	@—
Pears, prime halves.....	@—
Plums, unpitted, # lb.....	1½ @ 2½

RAISINS.

Taking into consideration the advanced state of the season, there has been an active movement in Raisins the past week, and it is doubtful if there are over forty cars now remaining on the entire coast. Sales have been mainly of loose Muscatels at 5½c, 5¾c and 6c for 2, 3 and 4 crown respectively. Present holdings are principally Muscatels, and prospects are favorable for a clean-up soon being effected at full current rates.

CITRUS FRUITS.

With warm weather most of the week, there has been a fairly active demand for Lemons and Limes, but stocks of both proved ample for all requirements, values remaining at the same quotable range as last noted.

Lemons—California, select, # box.....	3 00 @—
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Grape Fruit, # box.....	@—
Limes—Mexican, # box.....	4 00 @ 4 50

NUTS.

Spot stocks of Almonds and Walnuts are decidedly light, admitting of only small jobbing operations. In a limited way comparatively stiff figures, higher than quotations, are being realized. The Davisville Almond Growers' Association solicits bids on maturing crop, the bids to be opened Saturday, Aug. 9th, the previous bids of July 26th having been rejected on account of being deemed too low. Peanut market is firm at current rates, there being no excess of offerings.

California Almonds, shelled.....	15 @ 18
California Almonds, paper shell, # lb.....	12 @ 13
California Almonds, soft shell.....	9 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	11 @ 12
Cal. White Walnuts, No. 2 soft shell.....	9 @ 10
Cal. White Walnuts, No. 1 hard shell.....	9 @ 10
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4½ @ 5½
Peanuts, Eastern, hand-picked.....	6 @ 7

WINE.

The wholesale market for wines is not showing much activity, and market presents no new features. Dry wines of last year's vintage are quotable nominally at 20@25c per gallon, buyers' views being in the main rather under than above these figures, while in some instances asking prices are at a slightly higher range. On grapes of current crop the probable range on good to choice Northern for dry wines is stated at \$20@25 per ton. On San Joaquin Valley grapes for sweet wines the quotable range is \$12@16 per ton, the top figure being for best black and the inside quotation for second crop Muscat.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	141,823	498,585
Wheat, centals.....	156,441	413,121
Barley, centals.....	158,330	359,363
Oats, centals.....	5,170	49,154
Corn, centals.....	607	5,956
Rye, centals.....	36,750	39,600
Beans, sacks.....	4,811	12,807
Potatoes, sacks.....	21,327	102,797
Onions, sacks.....	5,882	17,336
Hay, tons.....	6,582	20,193
Wool, bales.....	1,754	5,997
Hops, bales.....	8	13

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	25,164	284,927
Wheat, centals.....	137,958	348,736
Barley, centals.....	4,924	109,129
Oats, centals.....	530	4,762
Corn, centals.....	105	3,559
Beans, sacks.....	240	1,449
Hay, bales.....	354	12,926
Wool, pounds.....	34,180	85,157
Hops, pounds.....	2	2,058
Honey, cases.....	2	53
Potatoes, pack's.....	1,266	5,294

California Dried Fruit at New York.

NEW YORK, Aug. 6.—Evaporated apples, common, 8@10c; prime wire tray, 10½@10¾c; choice, 11@11½c; fancy, 11½@12c. California Dried Fruits.—Stocks and offerings on the increase. A very fair demand at current rates. Prunes, 3½@6½c. Apricots, boxed, 8½@10½c; bags, 8@10c. Peaches, unpeeled, 8½@10½c; peeled, 12@16c.



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HORTICULTURE.

Pacific Coast Apples in Australia.

We have a copy of an interesting and important letter concerning selling Pacific coast apples in Australia, received by Mr. J. R. Anderson of Victoria, B. C., from Mr. E. Hutcherson, Deputy Minister of Agriculture, Claremont, Western Australia. It describes the requirements of the Australian trade and tells of the forlorn fate of some unwise California shipments. We make the following extracts:

I have now had a year's experience in the Australian Commonwealth, having in turn visited each of the States—Queensland, New South Wales, Tasmania, Victoria, South Australia and Western Australia. There is no doubt that Australia is going to make an effort to increase her trade with Canada, and more especially her fruit trade. At the same time I would call your attention to the fact that there is a good opening here for some of the upper country apples of British Columbia, to reach here in October, November and December, and even as late as January. Of course, I can only speak personally of last season. During those months good sound apples were worth 20 shillings per fifty-pound case, and even now at this early date imported Tasmanians are selling for 15 shillings, while good locals, good in color and well packed, go as high as 17 shillings at auction. I certainly would advise some of your best shippers to make a trial shipment here this winter. On account of the position I hold here it would be impossible for me to have anything to do with them, more than I would be able to know what they brought and the charges. There are several good reliable firms here, and I enclose the names of two, and if you were to make shipments of say fifty cases each per month, would give them a good trial. It would be necessary to get a through rate to Fremantle, as the Canadian-Australian steamers only come as far as Sydney.

FRUIT DESTROYED.—It is hardly necessary for me to say that only good apples need be sent, and of good shipping quality, in good strong cases, the apples wrapped in light paper and the case bound with light hoop, iron or wire. Quite a number of Californian apples reached here last December—beautiful fruit—and would have brought at least 30 shillings per case, but they would not stand the inspection test for codlin moth, as they condemn on traces, though the grub may have left the fruit before leaving California. The whole lot was burned. The names of the firms are as follows: Gilbert J. Sharpe, Fremantle, W. A., and N. J. Simper, Fremantle, W. A. The latter is wholesale only, while the former is the largest dealer in the State and has retail stores in all the mining centers.

INSPECTION.—As regards the inspection in this State, I have been on the staff for the last eight months, and have been fortunate in being placed on the staff at Fremantle, where we have the most up-to-date buildings and plant for fumigating and inspecting fruit and fruit trees there is in existence. The main building is 150 feet long by 50 feet wide, with boiler buildings on the end and two large incinerators in the yard for the destroying of infected fruit and cases. To give you some idea of the system adopted, all fruit trees, plants, nuts, etc., on reaching this port are placed on board trucks and run down to the fruit sheds; apples, pears and quinces are at once placed in the fumigating rooms to destroy any codlin grubs that might be on the cases. The

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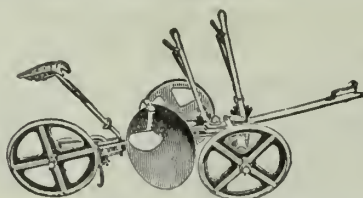
Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price 75c. per bottle. Sold by all Druggists.

Hall's Family Pills are the best.

cases are then opened and the fruit placed on tables, each case separately, and all rotten fruit and wrappings removed and burned. They are then examined, and, should codlin grubs or traces of the same be found, the whole case is at once returned to the case from which it was taken and burned. In the case of oranges and lemons, the wrappings are first removed and the fruit put into fresh cases before being fumigated. All cases are first put into steam rooms (of which there are three) before being used again. There is also a large tank in the yard, containing a solution of caustic soda, which is kept at boiling heat, that can be used for dipping cases and lids, but most importers prefer the steaming. All work in the sheds, with the exception of the inspection, is done by the importers or their employees. The Government makes a charge for inspecting. The revenue for 1901 was something over \$10,000, and 78,175 cases of fruit and 116,760 trees and plants were treated. So far there have been no codlin moths in this State, and every effort is being made to keep them out.

THE FRUIT FLY.—Up to September, 1901, the importation of apples, pears and quinces was prohibited from countries where codlin moths were known to exist, and apples went up to 1 shilling per pound, and those who had bearing orchards here made small fortunes. But while they have kept out the codlin moth, they have allowed the Mediterranean fruit fly to get in, and it has now quite a hold on what is known as the suburban district, in and around Perth, probably 25 miles long by 12 miles wide. The Government is using every means to keep it from spreading and to stamp it out. I would certainly advise you in British Columbia to be on your guard against this most destructive insect pest.

Nobody is wise all the time. The most prudent of us will occasionally eat under-ripe or over-ripe fruit in summer. We do not suffer long if Perry Davis' Painkiller is at hand to cure the cramps.



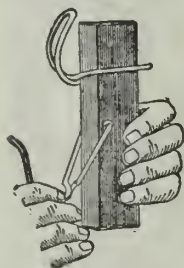
The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.



WE COULD SAVE

\$500 a day if we could make PAGE FENCE of common fence wire, but it won't hold the coil. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

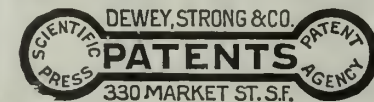
THE PROP THAT SAVES THE CROP



They are to the wooden fruit prop what the clothespin is to the clothesline. They grasp the prop by the prong points and form a crutch that holds the limb firmly but as gently as if held by hand.

Be sure you get Woodward's adjustable prop bracket. The only one that adjusts itself to any prop or cottonwood pole. Cost 2c. each and never wears out. Ask your hardware dealer.

J. K. Woodward & Co, 860 Vine-st Riverside, Cal.



HAS NO EQUAL
For
Spavins, Ringbone, Splints, Curbs,
and all forms of Lameness
bunches or bony enlargements.

Dr. B. J. Kendall Co., Gentlemen:—I have used your Kendall's Spavin Cure for 20 years and have found it an infallible remedy. Please mail me your book at once as I have a colt that I am now having trouble with, and oblige Yours truly,
L. L. JARVIS, Dayton, Texas, Sept. 22, 1900.
As a liniment for family use it has no equal. Price \$1.50, six for \$5. Ask your druggist for KENDALL'S SPAVIN CURE; also "A Treatise on the Horse," the book free, or address
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A practical, reliable manual upon producing eggs and poultry for market as a profitable business enterprise, either by itself or connected with other branches of agriculture. It tells all about how to feed and manage, how to breed and select incubators and brooders, its labor-saving devices etc. 12mo., 331 pp., 140 original illustrations cloth. Price, \$1 postpaid.

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1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

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80 Acres All Rich Valley Land.

Good house of seven rooms and bath, and other buildings. Located one mile from St. Helena, Napa Co., near school and R. R. station. Price reasonable. Address H. J. LEWELLING, St. Helena, Cal.

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4,000 acres alfalfa for lease on shares. Rental only one-third of the butter fat produced. Tenant retains two-thirds butter fat and all calves and all hogs. Alfalfa the king of dairy foods. Butter at half its cost in Eastern States. No housing and feeding stock. Pasturage every day in the year. Don't buy land. Buy cows and rent alfalfa. Far greater profit thus to dairymen. Skimming station of the San Joaquin Ice and Creamery Co. on the property.

Feed for Cattle by the Month

Write for particulars to
KEARNEY VINEYARD SYNDICATE
Kearney Park, Fresno, Cal.

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Glenn County, : : : California.
FOR SALE
In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

Feeds and Feeding.

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This is a practical, thorough and complete work based on what has been done: a record of solid facts.
Every Feeder, Breeder or Farmer should have it for every-day reference.

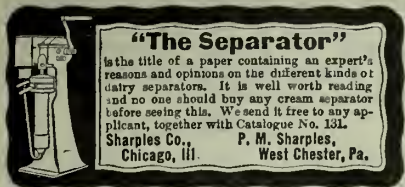
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THE DAIRY.

The Dairy Display at the State Fair.

At the State Fair at Sacramento, Cal., September 8th to 20th, there will be a dairy display which offers exceptional inducements to exhibitors. It will be in charge W. H. Saylor, superintendent. The following is the premium list—entrance fee being omitted in this department:

FRESH BUTTER.—Best tub, \$75; second best, \$60; third best, \$50; fourth best, \$40; fifth best, \$35; sixth best, \$30; seventh best, \$25; eighth best, \$20; ninth best, \$15; tenth best, \$10.

No sample scoring less than 85 points to be entitled to any award. No distinction between creamery and dairy classes.

For the purpose of uniformity the butter should be packed in twenty-five pound tubs, with parchment linings. This tub should be inclosed in burlap and no marks placed on the tub. Address shipping tag "Dairy Exhibit, State Fair, Sacramento," with the name of exhibitor on tag.

EXPORT BUTTER.—Best package and quality suited for export, silver medal; second best, bronze medal; third best, diploma.

CHEESE (California manufacture).—Best, \$15; second best, \$10; third best, \$5.

TINNED MILK AND CREAM (California manufacture).—Best can condensed milk, silver medal; second best, diploma; best can cream, silver medal; second best, diploma.

Butter must be sent to reach Sacramento on September 13th, with all express and other charges prepaid. The butter will be sold after the Fair and proceeds sent to the exhibitor, unless otherwise instructed. Correspondence should be sent to W. H. Saylor, 114 California street, San Francisco, previous to September 8th. After that date to Sacramento, Agricultural Pavilion.

THE STOCK YARD.

Demand for American Horses in France.

American horses are in demand in France. The French army purchases annually a large number of these animals, and on the farms they are gradually displacing cattle for draft purposes. For many years the soil has been cultivated almost entirely with the aid of cows and oxen, but for this work the superiority of the horse is fully acknowledged. The introduction into France of American agricultural machinery—such as mowers, reapers, drills, rakes, etc.—has led to the use of horses in greater number than before. The exodus of laborers from the farms to the cities is still another explanation of the increased demand for draft animals. This exodus is also responsible for the increasing use of farm machinery. The scythe is giving place to the mower, the old-fashioned method of sowing to the modern drill, and these machines are worked best by horses. A leading agriculturist stated recently that "the demand for agricultural machinery to replace hand labor on the French farms will be greater this year than ever before."

The importation of horses from Argentina and Russia has not been entirely successful—the mortality en route, the high freight rates and the great change in climate (with regard to horses shipped from South America) make the selling prices in France almost prohibitive.

Colts three to four years old have been successfully imported from the United States. When shipped at this age the animals are less liable to in-

jury and less susceptible to climatic changes. Care should be taken to send only sound specimens. Upon arrival at French ports the animals are carefully examined by veterinarians, who exclude all in any defective. Closer attention should be paid to the shipping of the horses, many of which arrive in deplorable condition. Arrangements should be made for properly caring for the animals after they reach their destination. This could readily be done, and the expense incurred would be more than made up by the increased prices that would be obtained.

WALTER T. GRIFFIN,
Commercial Agent.
Limoges, June 23, 1903.

FORESTRY.

Forestry Investigation.

The Bureau of Forestry of the U. S. Department of Agriculture is now progressing with its field season of 1902, and its work is now being carried on in twenty States. The Bureau has appointed ninety new student assistants for this season, the entire field force numbering 165 men. The work includes, among other things, the gathering of the necessary data for several working plans, a study of a number of well known commercial trees, the examination of farm woodlots, and a study of the treeless areas with a view of devising plans for forest extension.

The Bureau of Forestry begins the new fiscal year of 1902-1903 with an appropriation of \$291,860. The amount for the year just ended was \$185,440. This increased appropriation shows how this work commends itself to Congress, and it makes possible a wider range of work. The present season's work is by far the most varied and interesting yet undertaken by the Bureau of Forestry, and is being carried on in Maine, New Hampshire, Vermont, Massachusetts, New York, New Jersey, Maryland, Tennessee, Kentucky, West Virginia, North Carolina, Michigan, Minnesota, Nebraska, Oklahoma, South Dakota, Montana, Arizona and California. Later in the season it will be extended to still other States and Territories.

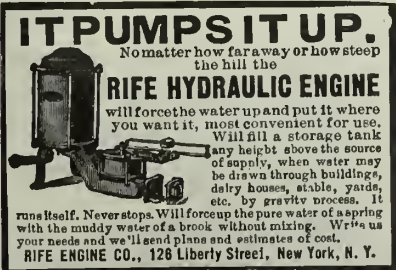
A study of the rate of growth of the sugar pine in California, which was begun last season, is now being continued. Last year's work began in the northern part of the State and in southern Oregon, and this season the examination will be continued southward with the idea of covering the full commercial range of this important timber tree.

Make it very plain to your dealer that you know there is no substitute for Perry Davis' Painkiller for external use from neuralgia to a mosquito bite and internally for all bowel disorders.

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Breeder of all the Leading Varieties of Fowls.
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BEANS, POTATOES, GRAIN, DRIED FRUITS,
DECIDUOUS AND CITRUS FRUITS.
Car Lots a Specialty. Send Samples.
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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. E. Burke, 30 Montgomery St., S. F.

JERSEYS—First-class regist'd bulls for sale. Inquire C. L. Taylor, 218 Sansome St., San Francisco.

A. J. C. C. JERSEYS. Service bulls of noted strains Joseph Maillard, San Geronimo, Marin Co., Cal.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry, William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAGE & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

SWINE.

POLAND-CHINA PIGS.—Write us for prices on sows and boar not related. Sweepstakes herd—State Fair. S. P. Lindgren & Sons, Kingsburg, Cal.

SUTTON BROS., Lodi, Cal. Breeders of Regist'd Poland-China and Large English Berkshire Hogs.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. V. BOURLAND, Bishop, Inyo Co., Cal. Breeder of choice Thoroughbred Duroc Hogs. Five sows of unrelated families. Breeding stock for sale.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

ASHLEY BROS., Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and importer of South Down Sheep.

SHROPSHIRE RAMS. C. A. Stowe. Stockton.

THE NEW CROP

of pigs is coming on in good shape and we will soon be able to ship March, April and May litters whose sires and dams carry the blood of the most noted families in this country and England. We can furnish both BERKSHIRES and POLAND-CHINAS, with a large number to select from. Write for what you want and we believe we can please you.

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Intelligent Feeding of Poultry always returns a profit. Improper feeding does not. It costs no more to feed right than wrong. The nutritive ration must be balanced to meet specific requirements. Our booklet, "The Science of Poultry Feeding," tells you all about it. We will also send you, on request, our booklet "Poultry Fattening Perfected," which describes our new Poultry Crumming Machine and method of use; also trough feeding, and our special brand of Grenadier Meal; the only Perfect Feed on earth for this purpose sold under a specific guarantee. Write for them at once and get posted.

THE PETALUMA INCUBATOR CO., Pacific Coast Agents PETALUMA, CAL.

Emery's Method of Feeding Poultry for Flesh and Eggs.

BOOKLET FREE IN REPLY TO A POSTAL.

N. OHLANDT & CO., Indiana and 24th Sts., San Francisco.

HOLSTEIN CATTLE.

SLEEPY HOLLOW RANCH, SAN ANSELMO, MARIN CO., CAL.

ALL THE LEADING FAMILIES OF THE BREED.

Every Sire directly imported from Herds of the Greatest Eastern Breeders.

Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.

Correspondence and personal inspection invited. R. M. HOTALING, 431 Jackson St., San Francisco.

HUMBOLDT STOCK FARM,
JOSEPH MARZEN, PROPRIETOR.
Breeder of SHORTHORN AND HEREFORD CATTLE.
Young Stock for Sale. LOVELOCK, NEVADA.

Protect your calves against Black Leg with

BLACK-LEG-INE

PASTEUR VACCINE CO., CHICAGO, NEW YORK,
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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

MEAT MEAL.—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

BRONZE TURKEYS. Ed. Hart, Clements, Cal.

BREEDERS' SUPPLIES.

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Diseases of the Horse and How to Treat Them.



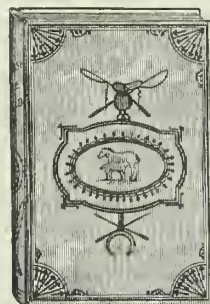
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New Edition and Concise Manual of Special Pathology for use of Horsemen, Farmers, Stock Raisers and Students of the Agricultural Colleges. Fully illustrated. Bound in cloth. Size, 5 1/2 x 7 1/2 inches. Cloth, \$1.25, postpaid.

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THE TROTTER HORSE OF AMERICA.

How to Train and Drive Him, with Reminiscences of the Trotting Turf.



By Hiram Woodruff.

The author was one of the most noted horsemen of this country, and in the work before us has given to the public the best thoughts, founded on years of experience in the feeding, handling, breaking and training of colts with a view to securing their best performances. Besides treating of driving horses, it gives a condensed history of the best horses in this country. 12mo. Size, 5 1/2 x 7 1/2 inches. Cloth, extra, \$1.25, postpaid. Address PACIFIC RURAL PRESS, 330 Market St., San Francisco, Cal.

ON THE ROAD.

In Central San Joaquin Valley.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

Selma Co-Operative Dairy Association had an output of 32,322 pounds of butter in July, this year. They have just bought from the San Joaquin Ice Co. its skimming station at Conejo.

The San Joaquin Ice Co. at Fresno, which is also engaged in butter making, has skimming stations at Madera, Kearney, Fresno, Parlier, Visalia, Fowler, Kingsburg, Selma, Laton, Riverdale, Lemoore, Armona and Guernsey, gets additional supplies from Monson, Dinuba, Tipton, Remroy, and a small amount from several other places, and makes about 22,000 pounds of butter per day.

EXPORT PRUNES.—It is reported that about five carloads of old prunes in the warehouse of one of the smaller independent companies operating in fruit at Selma went out for export points in 200-pound sacks last Monday. No other particulars given.

PEACH PRICES.—The Malaga Co-Operative Association paid 5 cents for an ungraded lot of Muir peaches which were expected to grade 50% choice, the last of last week, quite to the dissatisfaction of some other buyers, who thought the price too high. Both buyers and producers here were showing an indisposition to begin trade until fruit was in hand up to August 2d.

On Monday, July 28, Porter Bros. Co. paid 5c for one carload of peaches on a contract to deliver them in Fresno Tuesday for shipment Wednesday, and growers are quoting this instance of short buying as fixing the price generally at 5c; but two cars for Inderrieden & Co. are reported bought during the past week at in the neighborhood of 4½c—some of them at a slight advance over that.

GRAPE CROP.—Some experienced growers connected with co-operative packing are saying that they expect a rather lighter crop of raisins than has heretofore been anticipated, on account of some failure to fill and the lateness of the packing season, which will have a tendency to make the picking for raisins less thorough. They also say there will be many seedless Muscatels.

BEES AND HONEY.—J. F. Crowder, first vice-president of the California Bee Keepers' Association, says that the bees about Selma have largely quit working. Mr. Crowder is building ten caps in which he can put ten extracting combs and eight comb honey sections, and will endeavor to get the bees to work a little harder for him by putting in the extracting frames alone until they are filled, then crowding half of them together at each end and putting in the light comb honey foundations between.

The Selma Association the latter part of last week sold Guggenheim & Co. of San Francisco a carload of extracted honey.

AMONG THE PACKERS.—The Selma Fruit Co., a local firm, composed of H. H. Borchers, Jesse Durham and H. Elliott, are in the green fruit and watermelon market this year, mostly on f. o. b. basis, packing in the Russ, Early & Harville warehouse, and selling in California, Arizona, New Mexico and Oregon markets. On dried fruits, honey, etc., Mr. Elliott will again have charge of the house for Russ, Early & Harville.

W. S. Hoyt has sold out of W. S. Hoyt & Co. and gone to Salt Lake, Utah. It is understood that Rosenberg Bros. of San Francisco were the purchasers and that Mr. Hobbs retains an interest with them.

T. A. Hoag of Fresno, who operates houses at Fowler and Selma, is putting out considerable green fruit again this season, particularly seedless Sultanias from Selma, at this time (August 2d). Harry Staley is in charge of the work at Selma.

R. D. Robinson, formerly in charge of the Pacific Coast Seeding Co. plant, is again on the outside for Griffin & Skelly. It is stated by parties connected officially with the co-operatives that

another \$5000 packing house will be erected and used this year by another society of co-operatives at Parlier. Over 1500 acres have already been signed for it.

It is stated on the same authority that the Phoenix Co. has leased the J. P. Clark warehouse at Kingsburg this year for raisins. It has been idle for several years.

R. D. Jones is in charge for Porter Bros. Co. at Selma this year, with Jerry Neil as buyer.

Frank Gray has charge of business for the Fresno Home Co. at Selma in the Brownstone warehouse. Geo. W. Vandegrift, who had charge of the Roedling nursery yard at Selma last season, is now with the Home for the packing season.

Griffin & Skelly will enlarge their packing house at Sultana this year considerably, and put in machinery to enable it to keep up with the demands of that growing section.

The Earl Fruit Co. have been shipping green fruit from Sultana this season, using the G. & S. house. H. E. Brown has been locally in charge of the work.

Mr. Miller and W. H. Wieman, near Orosi, small growers, are packing and shipping green fruits this season.

The Porterville Citrus Association, W. E. Sprott manager, will build to double its warehouse capacity this year, making it 140x108 feet; and the Zante Association, Wm. Duncan manager, will make considerable addition to theirs.

Much of the fruit on the Thos. Jacobs place, 10 miles from Visalia, is packed on the ranch and sold in Los Angeles. It is handled by the Klein Fruit Co. to the satisfaction of the grower. They also get other fruit in that county.

At Fowler the old Home packing house, now owned by Chaddock & Co., is having some \$4000 worth of improvements made to it. An 8-roomed bleaching and drying house combined, which may be quickly changed from one to the other by inserting or removing some tongued and grooved temporary walling, and to which the sulphur fumes in bleaching are fed through a simplified form of the Hanford process from a brick firing place, has been constructed. Two rooms, aggregating 45x75 feet floor space, are being added, and two more seeding machines and \$1500 worth of trays are being added to the facilities. These improvements will about triple the capacity of the house, especially on raisins. The Chaddock Co. has houses at Fresno, Fowler and Armona.

The Armstrong Fruit Co. has put in a new boiler in a newly constructed detached engine house, and added a 3-room bleacher, fed by three individual firing places and flues.

The Phoenix Raisin Seeding & Packing Co. is building a bleaching house of size sufficient to hold a carload of fruit at once. The rooms will be paper-lined, as are the other bleachers mentioned, and will have individual firing places. Two Anderson-Barngrover dippers and a number of trays will be added. The house manager is J. M. Wrightson, whose "knackiness" has been of considerable help to both himself and his employers since he landed in the land of the Pilgrims and Puritans.

Frank Lyman, Fowler grower and packer, runs only on raisins.

The packing house of the Malaga Co-operative Society of raisin packers has had about \$500 worth of improvements put in it this season.

C. R. G. A.—Raisin association affairs depending, as they do, so largely upon the action of the packers for the form they take, were, up to August 2d, very uncertain, but the present management seems to be doing as well for the growers as any man could. The principal thing necessary now is loyal support by those who officially created them, for the good of those who created them.

APRICOT PITS.—The price this year seems to be about \$5.50 a ton, instead of \$10 to \$13 as last year. As usual, the man who sold early in the development of the industry got the best of it; but the dealers at last dropped to the idea that the only other way the fruit

raisers could use them was for fuel, for which purpose they were worth about \$5.50 a ton; so that, and the community of interest among dealers, fixes the price hereafter.

TRAGEDY PRUNES.—The shipments of green Tragedy prunes from Tulare and Kings counties have been exceedingly large. They have been moving East continuously for the past thirty days, but the season for this fruit is now practically closed.

MIDSUMMER CURRANTS.—Porterville has for several weeks just passed been supplied with red currants from Harper's, 35 miles from Porterville east, in the mountains. Twelve-pound boxes of loose were two weeks ago selling at 85 cents per box. Black currants, blackberries and raspberries also came from that section to the Porterville market.

BRANDY STORAGE.—The storage capacity of the C. K. Kirby brandy distillery at Selma has been increased this year by the addition of three tanks, each 14 feet in diameter and 10 feet high.

ENGINEERING ABILITY.—The touches of mechanical ability of L. V. Remion, who is employed by the Phoenix R. S. & P. Co. at Fowler, are to be seen in several of the packing houses there. One little device—of double-blocking them—takes the jerk out of the springs of the A. B. graders, but he is not selfish enough to patent it. Just now he is engineer in the Phoenix house, and his engine is a marvel of soundless rhythm in its working; but his superiors say he

can fill any position in the business, from engineer to bookkeeper. Born in Georgia, of French parentage, the U. S. Patent Office already knows him as one of its proteges.

WILD HOG ATTACKS A BOY.—Petaluma Courier: Adolph Drees and several other youths of Petaluma left early Sunday morning on the launch Goleta on a fishing expedition to Schultze's slough. When they arrived at their destination each one left for different parts of the marsh to try his luck fishing for striped bass. Adolph Drees wandered away too far and was suddenly surprised by the presence of a wild hog, which made for him, tearing at him in a vicious manner. The youth dropped fishing tackle, fish, etc., and made for the boat. The hog tore his coat, which had been left lying on the marsh, in such a manner that he did not care to bring it home. The fish he had caught were eaten by the animal, and the boy thinks he's lucky to be alive.

A "CROOKED" COMMISSION FIRM.—Lodi Sentinel: A. P. Bellows of Acampo has been shipping fruit East and the commission merchants constantly wired him: "Fruit in poor condition. Sells for 60 cents a crate." This set his daughter, Miss Lillian, to thinking and she enclosed a note in one of the boxes, asking what shape the fruit arrived in and what the purchaser of this particular package paid. Before many days Miss Lillian received a letter from a woman in New York City who had secured the box and it read: "Fruit in fine condition. Paid \$4.95 a crate." This was enough for Mr. Bellows, and now another firm is handling his fruit and he is receiving tiptop prices.



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II. Why the California Climate Specially Favors the Growth of Fruits.	XXII. Plums and Prunes.
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IV. The Wild Fruits of California.	XXIV. Vine Propagating and Planting.
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THE VINEYARD.

The Outlook for the Wine Interest.

By PERCY T. MORGAN, Manager of the California Wine Association, in the Sacramento Bee.

The vineyard and wine industry is in a more stable and prosperous condition than ever before. In the spasmodic eras of so-called prosperity which have hitherto occurred, remunerative prices have prevailed for only short periods, succeeded by longer periods of depression and utter demoralization. The prosperity now promising is of a different sort. It is not due alone to the short crops which have occurred in the last two or three years. It should not, therefore, be succeeded by a severe drop in prices when the crop conditions are more normal.

The favorable conditions are ascribable to a steady increase in trade and to altered conditions in the handling of the business, due to the influence of a concentration of capital powerful enough to control the abnormal fluctuations which hitherto have been so disastrous to the vineyard interests of California. Not that fluctuations can be entirely prevented; that would be too closely approaching the millennium. But they will not, in many years to come, be violent enough to seriously affect the prosperity of those who depend upon viniculture for their livelihood. Consequently there need be no hesitation or reluctance in planting new acreage, for those who get their vineyards into bearing soonest can be assured of a longer period of remunerative prices.

The diminution of the vine acreage due to the slow ravages of phylloxera, coupled with a steady, if somewhat slow, increase in demand, will take care of any possible planting at the present time. And we have to look forward to supplying Cuba with wine at the not very distant time when she will be clamoring for admission into the great sisterhood of the United States. This, alone, will require an acreage almost as great as is now in bearing in the dry wine districts of this State, for according to the statistics of imports into Cuba its consumption of wine is almost equal to the dry wine output of recent seasons.

There will also have to be reckoned the opening trade of the Orient. As the civilizing influence of American institutions bears its fruit in the markets of the hitherto commercially unexplored East, the peoples of that country will rapidly learn that there is something of life beyond the mere keeping of body and soul together. They will demand and obtain some of the comforts and luxuries of life. With this awakening must come a demand for the healthful and sobriety-preserving light wines of California, which alone of the United States has been able to produce wines analogous to those of France and southern Europe.

It would thus appear that no agricultural pursuit offers the opportunity now promised through the planting of the vineyards. The great merchants, who look always to the future, believe this themselves, and are now doing what they have never before considered necessary or permanently remunerative, namely, organizing great vineyard companies with ample capital for the laying out and planting of vast tracts of wine grapes. But it is not from these great tracts that the larger portion of the tonnage for wine purposes will be derived. It is from the small vineyardist, cultivating and looking after his lands individually, and thereby obtaining from 30% to 50% more tonnage to the acre than is possible from the great vineyard tracts, that the very remunerative results will accrue. Every man who has a few acres to spare which are adaptable to grape culture should plant; in districts where phylloxera has been prevalent, with resistant stock, and with vinifera in localities where no phylloxera has yet shown itself, and where the land is sufficiently rich to produce a large crop to the acre in three years, supplementing the vinifera slowly from the profits of the vineyard with new acreage of re-

sistant stock, so that if phylloxera should ever invade the district, an insurance against ruin from its invidious ravages may be built up out of the profits from the quick-producing vinifera, which, compared with the resistant stock, is much less expensive to bring into bearing.

The phylloxera is not necessarily rapid in its work; indeed, in most cases it takes years after its first appearance to seriously affect the productiveness of a vineyard, so that in districts now free from disease, where proper precautions are taken to keep out infection, vinifera might remuneratively be planted. But in localities already ravaged it would be worse than folly to plant any but resistant stock. To secure a continuous and stable prosperity to the California wine trade, one thing that must be guarded against is the putting of the price of ordinary wine too high, and thus either checking the consumption or permitting the importation into our markets of the cheap foreign wines.

The crops of Europe have been phenomenal. New acreage has been steadily coming into bearing. The prices there are very low, and it must not be forgotten that freight and handling charges between California and the Atlantic coast constitute a tariff that goes a long way toward offsetting the customs tariff on foreign wines.

Our Senators and Congressmen must also be instructed to be on their guard against so-called reciprocity, which, while it may facilitate the introduction of Chicago pork, lard and beef into foreign countries, may at the same time kill the wine industry of the Pacific coast.

Taking everything into consideration, however, the clouds are few on the horizon of the California vineyardist; fewer, perhaps, than on that of any other industry at the present time, and he can look forward confidently to the hope, if not to the assurance, that his past struggles and despondency are but nightmares from which he has now awakened to a future of gladness and prosperity.

FRUIT MARKETING.

Spanish Raisin Crop Injured.

Special report by the Pacific Commercial Museum of San Francisco for PACIFIC RURAL PRESS.

Latest advices from Denia describe as altogether disastrous to the grape crop the terrible heat wave of the 9th inst., which literally scorched and charred all grapes exposed to the sun's rays. Shipments of fresh Muscatel grapes which had already commenced to the United Kingdom were suspended, and the loss to the raisin crop is calculated to exceed 100,000 cwts., thus reducing the estimated forecast to 380,000 cwts. against 492,000 cwts. last season.

R. W. BARTLEMAN,
U. S. Consul.

The Italian Olive Oil Crop.

According to official report, the olive oil crop in Italy in 1901-02 amounted to 83,213,550 gallons, as against 47,286,430 gallons in 1900-01 and an estimated average crop of 77,401,810 gallons. The last crop is, therefore, 35,927,120 gallons, or 76% in excess of that of the preceding year, and exceeds the estimated average by 5,811,740 gallons, or 7.5%. The exports of olive oil from Italy in the first four months of the current year amounted to 5,868,061 gallons, against 4,143,137 gallons during the corresponding months of 1901, an increase of 41.6%.

Rape as a Forage Plant in California.

We notice that Mr. John L. McNab, who asks a question about Dwarf Essex rape in our query column this week, gives the following account in the Sheep Breeder of his experience with the plant:

I sowed it in my orchard on the first of May and now have about five acres of it under the trees, but I find that the warm California spring is rather

hard on the young plants. Rape should be sown here in the fall or at the same time grain is seeded, before spring opens, thereby reaching a natural growth before the hot weather begins.

My flock when I took charge of it last November numbered 1900 head. After passing through one of the hardest winters we have ever known, I marked 950 lambs—about 75% of ewes. Our spring wool has just been sold at 19 cents, an increase of 3 cents over last year. Mutton is high. Wethers after shearing are bringing \$3.50 per head. I have pulled out 500 head of ewes to be bred at once to young Merino rams for fall lambs. This fall I shall sow about forty-five acres in rape in two separate fields. In one field I have thirty acres adjoining a summer pasture, and this I shall sow in rape, and in the spring turn in the lambs and leave them to feed and run on the range all summer. Is there any danger of scouring lambs by weaning them on rape? The editor replies: "There will be no trouble from the scouring of your lambs if they have access to grass the first two or three weeks they are turned on to the rape."

The Dairy Industry of the United States.

In a recently published report of the Twelfth Census upon "Cheese, Butter and Condensed Milk" occurs the following statement illustrative of the dairy industry of the United States as a whole in the census year 1900:

	Number.
Cows kept for milk on farms.	17,139,674
Cows kept for milk, not on farms.....	973,033
Total cows kept for milk.	18,112,707
	Gallons.
Milk produced on farms.....	7,266,392,674
Milk produced, not on farms. *462,190,676	
Total gallons of milk.....	7,728,583,250
	Pounds.
Butter made on farms.....	1,071,745,127
Butter made by creameries...	420,954,016
Total lbs. butter made....	1,492,699,143
	Pounds.
Cheese made on farms.....	16,372,330
Cheese made in factories.....	282,634,488
Total lbs. cheese made...	299,006,818
	Pounds.
Condensed milk produced....	186,921,787
Value total butter made, 18c..	\$268,685,845
Value total cheese, 9c.....	26,010,614
Value total condensed milk...	11,888,792
Value total cream sold.....	4,435,344
Value total factory products..	1,261,359
Value total milk consumed...	*217,645,100
Agg. value dairy p'dcts...	\$590,827,154
* Estimated.	

THE LARGEST TREE KNOWN IN THE WORLD—What undoubtedly is the largest known tree in the world has been recently discovered 2½ miles from the Sanger Lumber Co.'s mill at Converse Basin, far up in the Sierras, in Fresno county. The discovery was made by a party of hunters, but little credence was given to the report, as everyone thought the description of this colossus of the forest was exaggerated; but it has since been visited by people who have verified the finder's statement. The monster was measured 6 feet from the ground and it took a line 154 feet and 8 inches long to encircle it, making it over 51 feet in diameter. This tree

California Vegetables

IN

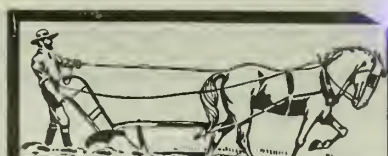
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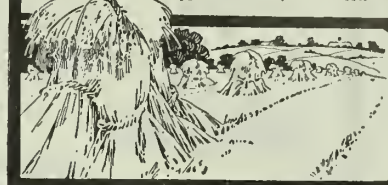


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is a few rods from the company's boundary line, and is on the Government reserve, hence will stand to interest sight-seers, and will escape the woodman's ax.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JULY 15, 1902.

- 704,496.—CIRCUIT BREAKER—B. Ballantyne, Sumpter, Or.
- 704,672.—VELOCIPEDE—H. Barry, S. F.
- 704,851.—ELECTRIC LAMP—H. W. Beecher, Port Townsend, Wash.
- 704,732.—GAS GENERATOR—J. Behm, S. F.
- 704,773.—TANK HOOP LUG—A. J. Behrens, S. F.
- 704,735.—ALARM CLOCK—W. C. Bethel, Seattle, Wash.
- 704,971.—FLUME GATE—E. Campbell, Redlands, Cal.
- 704,616.—MOTOR VEHICLE—H. Charles, Kofa, Ariz.
- 704,532.—CURTAIN SUPPORT—J. Gale, S. F.
- 704,743.—STEAM GENERATOR—J. L. Glroux, Jerome, Ariz.
- 704,823.—DRAPER—W. T. Gordon, Juniper, Or.
- 704,972.—BOTTLE COVER—F. T. Griffith, Los Angeles, Cal.
- 704,539.—TANK—E. N. Harmon, Belvedere, Cal.
- 704,878.—SHIP'S BERTH—A. W. Hitt, S. F.
- 704,746.—LOCK FOR SIDEWALK DOORS—P. H. Jackson, S. F.
- 704,967.—GAS GENERATOR—F. L. Kincaid, Stockton, Cal.
- 704,885.—PARCEL CARRIER—Lambert & Joy, Portland, Or.
- 704,557.—CHECK VALVE—W. R. Michener, Oakland, Cal.
- 704,901.—BICYCLE—F. C. Moore, San Bernardino, Cal.
- 704,660.—BAKE OVEN—J. Nestor, Tacoma, Wash.
- 704,910.—RAT TRAP—P. Olafsen, Tacoma, Wash.
- 704,664.—GAS GENERATOR—P. B. Perkins, Los Angeles, Cal.
- 704,756.—PUMP RUNNER—F. Ray, S. F.
- 704,588.—STEAM BOILER—J. P. Simmons, S. F.
- 704,666.—CAMERA SUPPORT—J. R. Stephens, Portland, Or.
- 704,768.—FREEZER AND CHURN—S. Sweeney, S. F.
- 704,667.—SCREEN HANGER—A. L. Taber, Corona, Cal.
- 704,717.—FUEL—B. M. Thomas, S. F.
- 704,723.—BELT CARRIER—J. Welchhart, S. F.

FOR THE WEEK ENDING JULY 22, 1902.

- 705,194.—DRESS CHART—Mary L. Avery, Oakland, Cal.
- 705,300.—CAR STANDARD—E. O. & M. L. Bradley, Tacoma, Wash.
- 705,383.—CARRIER—J. G. Colman, Comptche, Cal.
- 705,216.—FUEL—J. T. Davis, S. F.
- 705,060.—PIPE WRENCH—J. T. Ford, S. F.
- 705,396.—GUN CLEANER—H. F. Garrison, Bucoda, Wash.
- 705,071.—PACKING FRUIT—L. F. Graham, San Jose, Cal.
- 705,401.—GATE—S. Hamilton, Endicott, Wash.
- 705,403.—SQUARE—C. L. F. & M. C. Hooker, Boca, Cal.
- 705,409.—TYPE WRITER—O. L. Ingram, Walla Walla, Wash.
- 705,256.—SEWING MACHINE—F. T. Lellich, S. F.
- 705,257.—SEWING MACHINE—F. T. Lellich, S. F.
- 705,268.—GROOVING TOOL—A. R. Meister, Sacramento, Cal.
- 705,109.—REFINING COPPER—G. Mitchell, Naco, Ariz.
- 705,425.—PUMP—B. Musser, New Whatcom, Wash.
- 705,431.—VEHICLE BRAKE—J. P. Orteig, Tempe, Ariz.
- 705,438.—TRAVELING BAG—Phillips & McHenry, Portland, Or.
- 705,147.—DOOR OPENER—G. Rischmuller, S. F.
- 705,301.—LATCH—E. J. Root, S. F.
- 705,465.—LOG RELEASER—E. W. Spencer, Portland, Or.
- 705,485.—INK WELL—G. H. True, East Oakland, Cal.
- 705,167.—WATER HEATER—F. Walker, Los Angeles, Cal.
- 705,184.—INKING APPARATUS—Woodruff & Caton, San Jose, Cal.

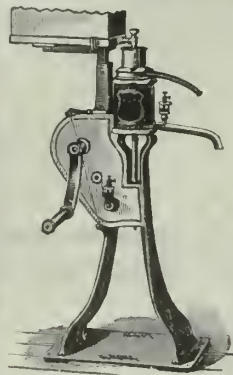
CIGARETTE SMOKER STARTED A BIG FIRE.—A Modesto telegram says a cigarette smoker started a fire that has destroyed the large county bridge across Stanislaus river at the Orange Blossom Colony, between Oakdale and Knights Ferry, and the big aqueduct flume of the Oakdale Irrigation Co. The loss on bridge and flume is about \$8000, but greater loss will fall upon the owners of orchards, alfalfa fields and gardens, who depended upon the flume for water for their land.

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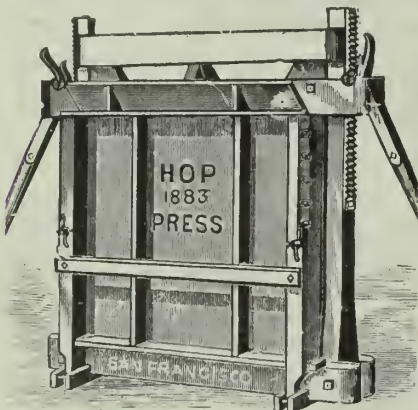
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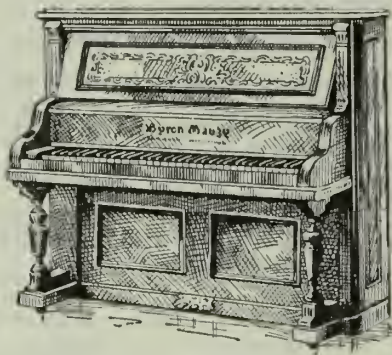


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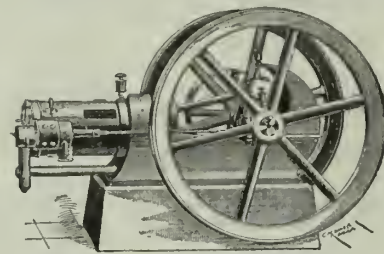
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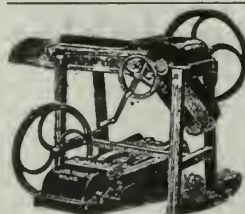


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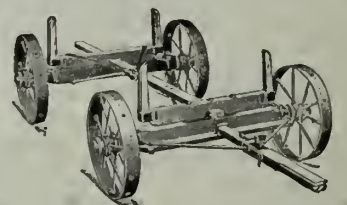
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Vol. LXIV. No. 7.

SAN FRANCISCO, SATURDAY, AUGUST 16, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Save the Forests.

The two pictures on this page convey an impression which cannot be deepened by words. The beneficent gift of nature to many generations still to come is ruthlessly destroyed by the clumsy effort which this generation makes to secure its share. There could hardly be a more impressive picture of wastefulness. But while there is little to be said about the impressiveness of the contrast in the scenes, there is another side to the matter, and that is one of hopefulness. Forest preservation is gaining in the public mind. The grand reservations which have been made will teach preservation by example. By example also is to be taught the lesson of securing the harvest crop without destroying the forest and of utilization of the products of cutting without waste and without inviting ruinous fires by leaving the forest floor densely covered with inflammable material. Another hopeful sign is the resoluteness with which organizations in the interest of forest conservation and water storage are now working. The leading organization of this class in the whole country is the Water & Forest Association of California. Membership is held in all parts of the State, and the objects of the association should appeal to thousands not now enrolled. Full descriptions of the purposes and work of the society can be had by addressing the secretary, Mr. T. C. Friedlander, at the society's office in the



Scene in the Sierra Sequoia Before Lumbering Began.

Mills Building in this city.

Just at present the society has a project in hand which should attract

wide attention, and that is the publication of a new map of the State showing the area of each watershed, the mean

annual rainfall and the forest areas of the State. It will give a practical knowledge of the rainfall and water supply of each river and creek in the State. The map has been prepared at considerable outlay, and the society will undertake its publication by subscription which we hope will be promptly and generously made. The way to properly treat our forest regions, to conserve our waters, to prevent ruinous floods and to proceed rationally toward irrigation development is to promote a campaign of education along all these lines, as the Water & Forest Association is doing. Now that the General Government is doing so much for forestry and irrigation, there should be strong State societies to cooperate and to promote the work. It should be a point of patriotism with Californians to maintain their society in the position of leadership which it now enjoys. It is co-operating with the irrigation experts at Washington in promoting and paying for the work done in this State. It has its own committees of the best legal talent in the State studying the feasibility of legislative enactment which will make our water laws more rational and in harmony with conditions in a semi-arid country, and to adapt them to the greater undertakings in the storage and use of water which may be realized in the future. It is the leading avenue through which the people can proceed toward better treatment and use of forests and streams.



Scene in the Same Forest After Wasteful Lumbering Operations.

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E. J. WICKSON. Horticultural Editor

San Francisco, August 16, 1902.

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The Week.

The Pythian visitation is the ruling event in city circles. Never before was there such elaborate decoration of the city nor such entrancing effects produced by electric lighting. The streets are thronged and in the evening the city becomes a vast vanity fair. The numbers arriving tax heavily all transportation agencies, but the visitors are as a rule good-natured and smile even under the manipulation of pickpockets who came with them from Eastern centers of iniquity. The local resident smiles also as he finds himself crowded to the wall by the multitude of strangers. Something of this sort is becoming a regular midsummer mode in San Francisco, and it adds much to our metropolitan manners and appearance. The different parts of our own State are contributing freely to the throng, and, so far as an observer can judge, the whole affair is notable and commendable.

Wheat is about the same as last week. There have been fluctuations in options, but they have recovered and are in better shape at the close. One full cargo of wheat and two others wheat and barley, largely barley, have gone out—all of them to Europe—and 27,000 barrels of flour to China and South America. Barley is firm for all kinds, some Chevalier going to Australia instead of England. Oats are quiet and easy for all that is not strictly choice. Corn is shading to sell with large yellow in largest supply. Small white and pink beans are firmer and there is some movement with light stocks visible. Millstuffs are easier with a downward tendency. Hay is in better shape with lighter receipts, but prices unchanged. Beef and mutton are firm with increased local demand; hogs are a little off, in sympathy with the Eastern situation. Butter is quiet, with second grades dragging as cold storage competes with them. Cheese is firm, with light offering and good demand. Eggs are rising, if strictly choice, but lower grades are no better. Poultry, although active and higher, has dropped at the close. Potatoes are dragging, with little shipping demand. The movement toward the Gulf has been restricted by railway washouts, etc. Onions are fairly firm and unchanged; there is but moderate outside inquiry and at low figures. The fresh fruit market is good for local consumption. Canners are hunting for bargains. Many interesting facts are given in our market review on another page. Dried fruit is active, but apricots are apparently in excess of immediate demand. Prune buyers and sellers are still apart. Most selling is of outside prunes on a basis of 2½c, with ½c premium for large sizes, while Santa Claras are held at 2½c, with ½c premium. There is a fair movement of limes and lemons, but prices are unchanged. Two hundred tons

of almonds were sold at the Davisville sale last Saturday at 10½c to 11½c, according to variety. Hops are quiet; high prices are still being reported from the country. Honey is very firm for the local trade. Wool is healthy. The spring clip is gone and buying of fall San Joaquin at 8@10c, with some lambs' wool included, is going on. Northern has sold to 12c, mostly lambs' wool.

The trustees of the California Polytechnic School, the new school of agricultural practice to be opened at San Luis Obispo, are in session as we go to press. The fine farm on which the school is to be established has been finally secured and the present questions are the style and extent of buildings and equipment, the course of study, etc. Director Leroy Anderson has returned from his investigation of Eastern institutions and reports very encouragingly upon the outlook for practical education in agriculture and the feasibility of winning popularity for it here. Several architects have prepared plans for the proposed buildings and the trustees are studying the plans with reference to proceeding as rapidly as can be done with safety. Probably it will not be long before some definite announcement of the expectations of the institutions will be made.

Would that we had in several of the larger cities of California such an institution as the Missouri Botanic Garden of St. Louis. It affords opportunity for the plant lover to gratify his best taste and sentiment, to the student of botany the most carefully prepared and arranged collections, and to the pupil of practical gardening a school just suited to his needs. The thirteenth annual report, which we have just received, shows that the institution is advancing admirably. It has an annual income above \$100,000 from the munificent endowment of the late Dr. Henry Shaw. There are nearly 10,000 species and varieties of plants in cultivation. Over 90,000 visitors were recorded during the year. The collections include about 365,000 botanical specimens, and the library over 36,000 books and pamphlets. All these facts indicate the greatness of the work, which is directed by Dr. William Trelease, the well-known botanist, who has done so much for its development. The report to which we allude has a masterly monograph on the yuccas, which will be looked upon as a classic in that interesting group of plants so characteristic of the arid regions of Western America.

Those who have almonds and hops this year are lifted above the troubles and losses which are visiting owners of several other products. The failure of the European almond crop is creating a sharp speculative demand here and large dealers are said to have freely possessed themselves of the crop and may pay high for what they have not yet gathered in. Hops are said to be eagerly sought for, buyers being reported as paying as high as 28 cents in Sonoma county. Wine grapes are also going beyond expectations and purchases up to \$25 a ton are reported from Sonoma county, where some particularly choice claret varieties are to be had. Somewhat in contrast with these satisfactory rates are the unfortunate prices secured at the East for fresh fruits and the low value of peaches and pears in some parts of California. But this is the common experience with crops—not all are in request in the same year or in the same locality, and disappointed ones will show their accustomed fortitude and plan for better things to come.

Eastern broomcorn growers have things their own way this year. Advices from Chicago are that: "Two months ago farmers would have been glad to get \$100 per ton for their old stock, while now they are refusing \$125. Just how high the price will go during the next year can not be estimated, but that it will go beyond any previous price there is no doubt. When 21,000 tons—which is the estimate of this year's crop—are to be supplied against an actual demand of 35,000 tons, the raiser has every opportunity to receive a good return on his crop." The outlook for broomcorn was certainly never better, especially in Illinois, Kansas, Missouri, Oklahoma and Nebraska, which produces 88.9% of all that is raised. California has not much interest in the general broomcorn situation, but sometimes has quite sweeping changes in her own local values.

QUERIES AND REPLIES.

Bellflower—Astracan.

TO THE EDITOR:—I write to bring to your notice what seems to me a curious freak in one of my apple trees—a Red Astracan. I have only one tree of this variety, as we grow only a few apples for home use. The second tree directly north of this is a Yellow Bellflower, and there is a large French prune tree between. The trees are set 22 feet apart. This season the Astracan tree has borne on its north side a number of apples of color and size like the Astracan, but in shape and size distinctly Bellflower. There is no mistaking the shape, it is so entirely distinct. There have been a dozen apples or more. I am unable to say if all grew on one limb, as my attention was not called to the fruit until the last picking, which was yesterday. Some of the apples had dropped, but four were picked from one limb high up on the tree. The tree bore heavily, and had been well thinned, but the Astracan apples did not grow to the size of these others, which are a very handsome fruit, and it seems to me well worth cultivating. But I do not understand about it. I know very little about such things, but I had not supposed that cross-fertilization ever manifested itself in that way. I thought it would be displayed only in the seedling. Is it what we would call a "sport"? And if so, how should I go to work to propagate it, through the seed of the apple or through a bud?—AMATEUR, San Jose.

The first thing to do is to make sure that no one has ever grafted Marshall's Red, a California seedling, which has the characters you describe, into a branch of your Astracan tree. If you can be sure that this has not been done, it may be said that it is understood now that cross-pollination may to a certain extent effect the development of the fruit immediately following the cross-pollinated blossom. Formerly it was supposed that the change would only appear in fruit grown from the seed, which involved this new element. Such manifestation as you describe is not likely to occur, and fortunately so, for, if fruits could be thus freely changed by cross-pollination, there would be no surety of what crop we should harvest and no motive for careful selection of varieties. Very accurate observation is necessary to determine just what conditions you have to deal with in your tree. It is important to know whether all the apples having the Bellflower form are borne upon one branch of the Astracan; in that case (supposing there has been no grafting or budding in) it would be a new variety, resulting from bud variation, and can be multiplied to any extent by taking the buds from that limb, or part of limb which bears this fruit. If the appearance comes from cross-pollination you will not be sure of getting the same thing from the seed of the fruit. You may or may not, and you are likely to get a number of fruits quite different from the suspected parentage. It would be an interesting experiment, and worth making, to grow seedlings from such fruit as you describe and select from them whatever seems to be striking in character, grafting scions from such seedlings into old trees in order to get the fruit as soon as possible. But we expect that you will find that you are dealing either with a top-grafted tree or have a case of bud variation.

Fruit Eating and Egg Laying.

TO THE EDITOR:—Will it tend to prevent hens from laying if they get at apples in an orchard to eat them?—FARMER, Napa.

There is a suspicion that too free indulgence in fresh fruit is at enmity with egg laying. This seems to be the popular notion on the subject, but whether it is really well founded or whether, as the moulting season naturally comes about the time of fruit ripening, the stopping of egg laying is not due rather to moulting than to fruit eating has not been fully determined. We are in doubt from our own observation on that subject. We have a large pen of Light Brahmas which stopped laying suddenly last month, soon after we began to feed them ripe apricots in large quantities. The apricots were dropping from the trees in the garden and were picked up and dumped into the chicken yard to get them out of the way. The hens stopped laying. It would be easy to conclude that the apricots did it, and perhaps they did, and yet moulting was beginning and may have been the real cause. It is unreasonable, however, to think that hens at large, with various articles of food available, should indulge so freely in fruit as to interfere with the natural exer-

cises of their functions. The matter can only be settled by accurate experimentation, which, so far as we know, has not yet been undertaken.

Plant Bugs.

To THE EDITOR:—I send some bugs; the smaller dark greenish or black ones were quite plentiful earlier in the season. I find them on the strawberry and blackberry plants. What are they, and are they injurious? This season is the first I have seen them. There seems to be something that destroys them, as I find dead ones very often.—S. S. S., Boulder Creek.

The various forms are different life stages of the same insect—the form and color changing considerably from the wingless youths to the winged adults. They are true bugs and live by sap sucking. They cannot be poisoned. Hand picking is the only practical treatment on fruiting plants. Earlier or later in the season they can be drenched with kerosene emulsion.

Apple Leaf Aphis.

To THE EDITOR:—I enclose you a leaf off of one of my apple trees. The diseased appearance seems to be caused by a little gray louse. The lice have been gone now for some time, but have left some of the trees looking all gray and dried up. Will you please inform me what the parasite is? Also, if it does enough damage to make it worth while to fight it. It did not do much real damage this year, but I fear it may come again in greater numbers next year. I would like to know, also, how to fight it.—A SUBSCRIBER, Coarse Gold.

It is the leaf louse or aphis of the apple. It has probably been cleaned out by ladybugs and other insects which prey upon it, but it has left enough eggs on the twigs to start the race again next spring. The eggs must be fought this winter with the lime, salt and sulphur wash, and the lice which hatch from eggs which escape this spray must be killed with kerosene emulsion as soon as they are seen on the leaves next spring. They multiply with almost incalculable rapidity, and the treatment must begin early. They will spoil the fruit and weaken the tree if they are allowed to multiply.

White or Dutch Clover.

To THE EDITOR:—We have heard that a low-growing evergreen clover is being used for lawn purposes at Berkeley. If so, we would be pleased to be given the name of the variety and where seed—true name—may be purchased. Also, if this clover is a good substitute for Kentucky blue grass.—LAWN MAKER, Oakland.

The only clover that is used to any extent in Berkeley lawn making is the common white or Dutch clover which makes a splendid combination with the Kentucky blue grass and thus participates in the formation of our best lawns. The same clover is grown by itself by a good many parties, and the result is quite a dense cover of creeping herbage, freely covered at intervals with small, white heads of blossoms. There are some other low-creeping clovers growing in the the University experiment gardens, but these have never, to our knowledge, been introduced to any extent in the house lawns of the town. Some people use white clover as a substitute for Kentucky blue grass because they like the appearance of it, because it responds very rapidly to less water than blue grass requires, and because, owing to the tenderness of its stems, it is quite easily cut with a dull lawn mower. All these points you will recognize as valuable to an amateur.

Peach Moth in the Almond.

To THE EDITOR:—I send you almonds nearly grown which show a large bunch of clear gum exuding, and in the discolored part of the husk under it you will find a small grub at work. What is it, and how can it be treated, and will the same treatment kill the eggs of the red spider?—C. L. McCoy, Sonoma county.

Prof. Woodworth recognizes the partly grown larva in the almond which you send as the worm of the peach moth. This worm has been noted before in the almond, but has probably never attracted very much attention, because it seems to confine its work to the husk and does not enter the nut. If, however, it should become troublesome and injurious, it can be restrained on the almond, just as it is on the peach, by the use of the lime, salt and sulphur spray as late in the winter as possible without injury to the blossom. It has been found by the University investigation in Placer county that ninety-nine out of one hun-

dred peaches may be secured free from worms in orchards well sprayed, and that even where trees are adjacent to unsprayed orchards seventy sound peaches out of a hundred can be gained. Unfortunately, common observation is that the lime, salt and sulphur wash does not injure the eggs of the red spider to any noticable extent, so that the sulphur treatment or special spraying for this insect will have to be resorted to later in the season.

Kissing Bugs.

To THE EDITOR:—I send you a bug, which please give me the name of and state if its sting is poisonous. I have been told it is a kissing bug.—W. C. D., Atwater.

Your insect is of the genus which received so much newspaper notoriety recently under the name of "kissing bug." There are two species commonly found in this State—one wholly black in color, bearing the name of *Melanolestes pisipes*, and the other, brown marked with black, bearing the name *Melanolestes abdominalis*. Your specimen is of the latter species. These bugs usually enter the house at night, being attracted by the light, and can, as a rule, be kept out in the same way that mosquitoes are. Their sting is painful and in some cases produces quite serious irritation.

Barley or Wheat for Hogs.

To THE EDITOR:—What is the best crop to sow to turn hogs into? Here we use barley, but my hogs prefer wheat as long as they can get it, and I am told hogs do not care for the barley till the rain comes. Can they eat either up clean, or will it make a volunteer crop the second year?—L. S., Sea View, Sonoma Co.

When people choose to grow barley for hogs they do not consult the hog; they choose the grain which will yield most under the circumstances, as, for hog feed, there is but little difference between equal weights of barley and wheat. But barley is a hardier plant, is less liable to rust and is surer to make a crop with uncertain rainfall and will make it in less time. All these things are on the growers' side, and the hog has to stand it; and, being of a contented disposition, he does well on it. If he has a chance, he will wait for the rains to soften the beards, but in most parts of the State he might starve if he waited for fall rains, so he tackles the disagreeable beards without complaint. It depends, of course, upon the ripeness of the grain and the dryness of the local atmosphere how much the hog will waste. As a rule, he does not leave more than other harvesting devices. The adherent chaff of the barley makes the grain more digestible and wholesome for horses than wheat is; for the hog this difference is of less account.

What the Apricots and Almonds Say.

To THE EDITOR:—I am studying the language of plants, and, as well as I can interpret, my apricots say they have all that they require—food and water in abundance; they are from six to twenty years old. My almonds that are alongside the apricots seem very dissatisfied and say that they are extremely short of both food and water; they are twelve years old. Can you explain why this difference?—H. O. YARROW, Contra Costa county.

We are farther away from the trees than you are and may not hear distinctly, but to our ear the almonds say: "The red spiders are taking the life out of us, they are chiseling up our leaf surfaces, they are stealing all the sap which our cells require and we shall soon lose all our leaves. Oh, we wish we were so fortunate as our neighbors, the apricots, in having foliage which the red spider does not like so well."

Dipped Grapes for Drying.

To THE EDITOR:—I have some Black Malvoise and Muscatel grapes that I propose drying. Will you kindly tell me how long they should remain in the boiling solution of lye?—READER, Oakley.

For an instant only, if the lye is boiling, and then plunge in fresh water to rinse off the lye.

Horehound on the Ranges.

To THE EDITOR:—Referring to Mr. H. J. Dennison's interesting and timely article on page 85 of the PACIFIC RURAL PRESS of this day's date, I write to say that at present the stock ranges of northwestern California are not seriously threatened with horehound (*Marrubium vulgare*), hence the lack of mention of this pest in my report. In mentioning the weeds on the ranges I was obliged, on account of

lack of space, to omit any extended article on range weeds, and therefore could only refer to those already threatening the ranges in that section. While it is true that horehound is a bad weed in parts of northern California, it is found principally in the older settled valleys, around towns and villages, on agricultural land and beside much-traveled roads, or, to speak in a more general way, along the lines of main travel. The region discussed in my report is chiefly composed of pastoral or timbered land, and that which is devoted to agriculture is mainly reached by water, hence those weeds which follow the steps of the white man do not readily find their way thither.

JOS. BURTT DAVY.

University of California, Berkeley, Aug. 9.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 11, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature has been nearly normal during the week. There was a light shower in the vicinity of Sacramento on the 9th. Grain harvest continues and is nearly completed in some sections. A correspondent at Wheatland reports that the yield of grain is far below expectations, but the reports from all other sections indicate that a heavy crop is being harvested. Hops are maturing rapidly, and picking will begin next week; there will be a heavy yield. Grapes were considerably damaged in some places by the recent hot weather, but the outlook continues good for a large yield. Pears are plentiful, but wormy. Peaches are yielding heavily. Late peaches and prunes are in good condition. The almond and prune crops in Yolo county are reported the largest ever known.

COAST AND BAY SECTIONS.

Cool weather has continued during the week and light showers have fallen in some sections. Reports from some of the southern coast counties show that grain is yielding better than anticipated, and in the central and northern counties the yield is heavy. Beans and hops are making good growth and large crops are probable. Grapes continue in excellent condition and are maturing rapidly. The damage by recent hot weather was light, and prospects continue good for a heavy crop. Nearly all deciduous fruits are ripening, and picking, canning and drying are in progress. There is a heavy yield of most varieties. Citrus fruits are doing well.

SAN JOAQUIN VALLEY.

The weather continued warm and partly cloudy until near the close of the week. Light showers have fallen at intervals in many parts of the valley. Grain harvest is completed in some sections, but will continue for two or three weeks in others. Wheat and barley have yielded good crops except in the south, and in some places the yield is the heaviest for several years. Sweet potato shipments have commenced. Corn is making good growth. Pasturage is becoming scarce in the south. The peach crop in Tulare county is unusually heavy. Other deciduous fruits, except pears, are yielding good crops, and were not damaged by heat. Grapes continue in excellent condition and large crops are expected. Citrus fruits are thrifty.

SOUTHERN CALIFORNIA.

Warm days and cool, cloudy nights have prevailed during the week. The grain crop in Santa Barbara county exceeds last season's, and in many other places it is reported as about two-thirds of the average yield. Harvesting is nearly completed, but threshing will continue for several weeks. Beans will yield a good crop, though probably lighter than last year. Sugar beet harvest is progressing; in some places the crop is better than last season's, but it is light in Orange county. The potato crop is reported fully up to the average. Walnuts are doing well. Deciduous fruits are all below average. Orange trees at Riverside are starting new growth. Grapes are in good condition.

EUREKA SUMMARY.—In some localities early potatoes are much damaged by blight. Grass is getting short. Hay baling is progressing; oats and barley are very promising. Condition of fruit good.

LOS ANGELES SUMMARY.—A cool week with considerable cloudiness. The water supply in some canyon streams is shorter than last season, but in wells increasing. Early peaches are in market; crop short.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 13, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.00	.23	.03	.17	62	50
Red Bluff.....	.00	.00	.00	.03	66	60
Sacramento.....	T	T	T	.02	92	58
San Francisco.....	T	T	T	.02	66	54
Fresno.....	T	T	T	.03	110	58
Independence.....	.05	.29	.31	.04	90	60
San Luis Obispo.....	.00	T	.18	.02	80	46
Los Angeles.....	T	T	.09	.03	84	60
San Diego.....	T	.90	T	.03	72	62
Yuma.....	.00	.11	.08	.34	108	74

Agricultural Review.

ALAMEDA.

ACTIVITY IN THE CATTLE MARKET.—Livermore Herald: There has been considerable activity among the cattle men this week. J. C. Hayes purchased eighty-four head of the Dutcher & Schweitzer herd at Newman the first of the week and sold the whole lot upon their arrival here, the drove being equally divided between D. M. Teeter and Frank Floyd. Charles Beverson shipped fifty-three head of beef cattle on Thursday to Wagner & Co. of Stockton. Dan Fallon sold and shipped to parties at Snelling forty-seven head of thoroughbred Polled Angus cattle.

BUTTE.

BIG SALE OF PRUNES.—The Bidwell prune crop, estimated to be 800 tons, has been sold to a San Jose packer. This is believed to be the largest fruit sale made this year.

GATHERING ALMONDS AND PRUNES MADE EASY.—Cibola Enterprise: Ed Messenger has perfected and applied for a patent on an apparatus to gather almonds and prunes. The device is composed of canvas sheets supported by iron rods, so that they assume a funnel shape. This sheet funnel is placed around the tree and the fruit, when knocked loose from the branches, falls into the sheet, and, rolling down to the bottom, falls through an opening into the box. The apparatus is made light, so that it can be easily and quickly moved, and it is claimed that by using it three men can gather as much fruit as can fifteen in the usual way.

FRESNO.

A GOOD CROP ON SUMMER-FALLOW.—Sanger Herald: The crop on the Balfour-Gutrie ranch, 3 miles west of town, has been harvested and the grain sold and delivered. Wm. Radley, the foreman of the ranch, reports that the average yield from 3200 acres was about seven sacks per acre, and it brought about \$1 per cental. This shows that it pays to summer-fallow the soil. Mr. Radley says that hereafter they will have no more winter-sown grain.

BIG FENCE CONTRACT.—Selma Enterprise: C. L. Beltz of Selma has contracted to build 35 miles of woven fence for the Kearney syndicate, west of Fresno. The fence will cost about \$8000. Its construction will require ten carloads of posts, two large carloads of woven wire, twenty tons of barbed wire and one and a half ton of staples.

GRAIN HARVEST ABOUT FINISHED.—Sanger Herald: While it was generally known that the acreage sown to grain last winter was somewhat less than in previous years and a shortage of the crop was anticipated in consequence, yet it turns out that the decrease was not so much as figured on. Upon the whole, the crop in Fresno county may be considered fair. Some growers have had a larger yield than they expected, while the reverse has been the case with others. The yield and the quality of barley was excellent, and as the price of this cereal has been higher than usual, the barley growers are quite satisfied with the year's operations. Jos. Well, the local grain dealer, reports that the highest price paid for white wheat here this season was \$1.07 per cental.

GLENN.

RAT EXTERMINATORS.—Willows Journal: Hochheimer & Co. received by Wells, Fargo & Co.'s express from Ohio this week two ferrets, which will be liberated in their warehouse here to exterminate the hordes of rats which play havoc with goods stored therein.

KINGS.

CLOSE PRUNING AND BIG APRICOTS.—Hanford Sentinel: J. W. Belknap reports that he pruned his apricot trees close, had large fruit and harvested at a cost of about \$40 a ton, dried, while others who did not prune closely have had to pay about \$65 a ton, and then they did not get good, large fruit. Mr. Belknap believes in pruning back and thinning well.

GRASSHOPPERS STILL LINGERING AROUND.—Hanford Journal: Grasshoppers have appeared in large numbers in the Lucerne vineyard. Mr. Sargent, the superintendent, says it is a mystery where they came from. At present they are working on one forty-acre piece of the vineyard. They eat the leaves, which exposes the grapes to the sun. The grapes, having no protection, soon burn up.

MADERA.

STEALING WHEAT.—Times: Recently when H. L. Crow of Berenda started for his field to continue harvesting he noticed fresh wagon tracks, and, following them up, discovered that sixteen sacks of his grain had been stolen. He traced the wagon and wheat to Fresno, and had Cap

Brown, a colored man from Malaga, arrested and lodged in jail. Constable Crow returned to Madera, swore out a complaint and brought Brown here and lodged him in jail. He also shipped the wheat here. Brown had a full load of grain on his wagon, but it has not yet been discovered to whom it belonged.

MONTEREY.

THE BEET CROP.—Salinas Index: A short trip through the beet fields of the Pajaro valley and that portion of the Salinas valley lying north of Salinas shows that the saccharine vegetable is in fine condition and that the promise of a splendid output is excellent. This condition is said to be due to the warm, sunny days and the cool, foggy nights. The prevailing weather also tends to increase the per cent of sugar in the beets. Harvesting will commence in a few weeks, and a large force of men is putting the big sugar mill in shape for the campaign.

NAPA.

BUSY TIMES AT CANNERY.—Register: About 300 hands are employed at the big cannery in East Napa. In three weeks 360,000 cans of apricots have been "put up." The fruit was obtained from Napa, Suisun and Sonoma valleys and Alameda. In cherries, 9000 cases or 216,000 cans have been preserved. The management expects to can 60,000 cases of peaches of all varieties this season, and is ready to buy all the peaches in the valley. A quantity of the institution's product has been sold in England and Germany and throughout the United States. Orders have been received from South Africa and New Zealand. Already shipments have been made to Honolulu and to Port Arthur, Siberia.

ORANGE.

DRIED FRUIT ASSOCIATION.—Santa Ana Blade: The Santa Ana Dried Fruit Association, an adjunct of the Santa Ana Farmers' Club, has been recently organized and already controls between 100 and 200 tons of dried fruit, with daily accessions. The affairs of the Association are in charge of Oscar Cruenenwald, Dr. B. L. Greenleaf and R. Moyer.

THE SEASON'S GRAIN CROP.—The county's total grain yield, as now estimated by competent judges, is 300,000 sacks in the San Joaquin, El Toro and Capistrano districts, 25,000 in Bolsa and immediate territory, and 100,000 in La Habra and vicinity, making a total of 420,000 sacks for the season.

SACRAMENTO.

HEAT DAMAGES GRAPES, PRUNES AND WALNUTS.—F. E. Linnell of Orangevale says that the north winds of last week did a great amount of damage to the orchards and vineyards of that locality. The damage to the Tokay grapes, he thought, would be from 20% to 30%. The intense heat burned the tops of the walnut trees. French prunes were badly damaged and, in fact, all kinds of fruit were more or less hurt. The oldest settlers in the neighborhood say they can not remember when the heat was so intense.

SAN BERNARDINO.

HEAVY APRICOT YIELD.—Redlands Facts: There were 135 tons of fruit handled at the Shaw Bros.' drier, nearly all of which was from the Shaw orchards. The trees gave an immense crop, some of them bearing 1000 pounds of fruit each. Had the fruit been of good size the trees would likely have been crushed by the enormous weight.

SAN JOAQUIN.

LARGE WHEAT STAND.—Lodi Sentinel: At the ranch of J. Ryan, 1½ mile west of Lockeford, was one of the best wheat stands in San Joaquin county, the grain averaging twenty-five sacks to the acre. The harvesting was done by John Tretheway, who holds the best cutting record of this season, having cut 62½ acres in one day with a 20-foot cut.

LODI WATERMELONS IN DEMAND.—H. J. Corell contracted with a San Francisco firm to furnish a car of melons on August 8th for \$187.50. He received 15 cents each for the melons, the car containing 1250.

BLACK-EYE BEANS.—There is more land planted to Black-eye beans in San Joaquin county than ever before. Last season's high prices caused the farmers to put in a big acreage, and as a result the local market has weakened. One hundred acres were sold last week at \$2.90 per 100 f. o. b. Stockton. Old beans are in light stock and will be cleaned up before new crop is on the market.

ALMONDS BRING GOOD PRICE.—Stockton Independent: Four carloads of almonds, the entire crop of Senator Langford's orchard on the old Armstrong & Hatch place, near Acampo, was purchased by M. P. Stein & Co. The lot was made up of Ne Plus Ultra, Languedoc, Non-

pareils, I X L and Drake's Seedling varieties, and while the prices per pound are not given, it is understood that Mr. Langford will receive about \$8000 for the four cars. The warm weather of the past two weeks has matured the nuts very fast and now the hulls have commenced cracking open. In some sections harvesting has commenced and by the first of next week the gathering of almonds and walnuts will be well under way in this county. It is estimated the crop will be of good average size.

APRICOTS FOR THE EAST.—Lodi Herald: Mason Bros., of the Lodi Fruit Warehouse, shipped on Thursday two carloads of dried apricots, one to Philadelphia and the other to Missouri. This firm is doing a good business and is paying the producers 5 and 6 cents a pound for apricots.

RAVAGING MELON PATCHES BECOMING DANGEROUS.—Mr. C. H. Enlow, who lives south of Lodi, shot into a party of marauders who invaded his watermelon field Sunday night. That the shot hit one of the gang is evident from signs in the field and also in the increased speed of all but one of the gang. A survey of the field next morning showed the havoc wrought by the marauders. In their search for ripe melons they destroyed many of great size only to find that they were still green. The damage done could not well be estimated, but it was sufficient to show that the thieves' work cost Mr. Enlow twenty times as much as the expense of furnishing each of the pirates with a good melon. It is the havoc wrought in their fields that the farmers grudge, not the value of what melons a party could eat.—H. J. Corell, who has fifty acres of choice melons in the Langford tract, was aroused by the talking of several Japs who had designs on the luscious melons. He seized his gun and fired a shot at them, dropping one of the brown skins, hitting him in the leg.

INCREASED SHIPPING DEMAND FOR POTATOES.—Stockton Independent: There is a demand for potatoes in Texas, and local firms have several orders on file, but cannot ship the tubers, as the railroad companies will not guarantee to deliver the produce until the floods, which are raging in the Lone Star State, have ceased. The heavy rains have played havoc with the railroads, but just as soon as the repairs are made it is expected that the shipping of potatoes from this city will begin with a rush. Up to this time there has not been much of a demand for "spuds" in the Southern and Middle States, though a few carloads have been sent there from Stockton. Now that the wholesale prices here are lower, the commission men say that they can meet the big advantage other sections have in freight rates. The people through Texas, New Mexico, Louisiana, Mississippi, Kansas and Arkansas prefer California potatoes, even if they have to pay slightly more for them than they do for other tubers.

SAN LUIS OBISPO.

LARGE WHEAT YIELD.—San Miguel Messenger: The largest yield of wheat reported in this section is that of T. J. Ballard of Parkfield, who raised 320 sacks on 13½ acres of summer-fallowed land.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: Apricot owners are holding for better than quoted prices. Seven cents would take the lot. Offers of 5c and suggestions of 5½c have been made, but no sales are reported.—The strawberry shipments from Watsonville depot for the past week amounted to about 100 chests, the lightest "between crops" shipments for years. The new crop will come on in about ten days and a fair yield is expected.

SHASTA.

CATTLE THIEVES AT WORK.—Joseph A. Dunham, president of the Shasta County Livestock Association, reports that cattle thieves operating in the ranges of this county have within the past few months made away with over 300 head of stock. It is believed the depredations are being carried on systematically by an organized gang.

SOLANO.

PROGRESSIVE FARMING.—Dixon Tribune: James Millar has conducted a large dairy at favorable seasons of the year as an auxiliary to his other farming operations. Mr. Millar proposes to now engage more extensively than ever in dairying, and to that end will install in a few weeks a 20 H. P. gasoline engine, which will drive a 5-inch centrifugal pump for irrigation purposes. The plant will be devoted to the irrigation of forty acres of alfalfa.

SONOMA.

WINE GRAPE PRICES.—Santa Rosa Press-Democrat: The prices to be paid for grapes by the Wine Association in this

section this season have not been announced, but it is understood that there will be a number of independent buyers in the field. Offers of \$25 have already been made for special lots.

HOP PROSPECTS.—Heldsburg Tribune: A number of hop growers in this section have been interviewed and express the opinion that this year's crop will be of fine quality. Picking will be but little later this year if the warm weather continues. A large crop will be harvested and the same price as heretofore paid for picking.

A CENT A POUND FOR HOP PICKERS.—Santa Rosa Farmer: Hop picking will commence about September 1st. In some yards the hops are considerably in advance of the stage they were in at this time last year. Prospects point to a banner yield in Sonoma county this year, and the market is encouraging. The prevailing price of last year—\$1 per 100 pounds—will be paid for picking, many growers having expressed the opinion that 1 cent a pound is a fair rate for both grower and picker, claiming that industrious people can earn more at that price for this work than at any other unskilled labor. Buyers are reported offering 25 cents a pound for bops at Fulton.

SUTTER.

DRYING THEIR OWN FRUIT.—Independent: It is stated by H. C. Clark of the local lumber yard that nearly every orchard in this county is supplied with its own fruit-drying outfit. He said that since the canneries were only taking the fruit which measured up to the size named in the contracts, the growers were compelled to take care of their large crop of peaches under size, and have supplied themselves with drying outfits.

TULARE.

HOW TO CATCH SQUIRRELS.—Times: On the old Lloyd place, southeast of town, says the Exeter Sun, is an old horse trough which is used very little, though it is kept half full of water to prevent its drying out. The squirrels, these warm days, come to the trough for water, and as it is low in the trough it is hard for them to get and they often fall in. Now, a squirrel can swim, but it is impossible for him to make a landing to get out, as there is nothing for him to grasp with his claws, and as a result he drowns. Last week Mr. F. G. Griggs counted 234 dead squirrels in the trough, the result of a four days' catch.

AN ENERGETIC WIDOW ON A QUARTER SECTION.—Register: When Mrs. Lucy Blankenship lost her husband a few years since by death, and had settled up the expenses of his illness and burial, she had 160 acres of land and \$1.50 left with which to care for herself and her two children. She got a few cows together as best she could and began dairying in a small way. Now she has twenty-four cows, which she, with the aid of her daughter, aged eleven years, and her son, aged seven, are able to milk. The Tulare Butter Co. paid her \$95.95 for her cream for May and \$92.06 for June. Besides this, she sold three hogs fattened during these two months for \$37.50, and is also raising twenty-four calves on the skim milk. This gritty young widow, with her two children, is making better than \$100 per month on her quarter section of land, and has to depend almost altogether on the wild feed that grows on the place.

PEELING PEACHES.—Exeter Sun: The California Fruit Canning Co. have installed a machine in their cannery at Fresno which is likely to revolutionize the present methods of canning peaches. It is the invention of the superintendent, Mr. Vernon, and is now being successfully used in peeling the peaches. Upon receiving the fruit the machine carries it through to an acidic solution by means of an endless band passing between revolving brushes which brush off the skins already loosened by the acid bath. It is then passed through a clear water bath to rinse it, after which it is carried to the pitting machine where it is pitted and halved and made ready for the cans. The process has several advantages over the old process of hand peeling. It removes the skin without marring the roundness of the fruit; it bleaches the pink color, objected to in Crawfords, and is the most cleanly.

VENTURA.

WALNUT GROWERS PREPARING FOR COMING CROP.—Oxnard Courier: The Oxnard Walnut Growers' Association, made up of all the prominent walnut growers of the south side of the river, is constructing a warehouse for the storage and drying of the crop, the structure to cost \$1300. It will be 50 feet wide and will be built as soon as possible, in order to be ready for the fall crop of walnuts, amounting approximately to twenty-seven carloads. The trees are more heavily laden than they have been for several seasons.

THE SWINE YARD.

Producing High Class Pork.

From an address by PROF. C. F. CURTISS of Iowa, at the Swine Breeders' Association of that State.

The hog's superior capabilities of converting farm feeds into meat products render it the most profitable animal domesticated on our farms, and pork production the most profitable industry of American agriculture, in spite of the ravages of hog cholera. This dreaded scourge gives no evidence of yielding to any of the loudly proclaimed methods of treatment or inoculation; but to the man who gives his hogs the range of all or the greater part of a fair-sized farm, and who applies vigorous measures of isolation, disinfection and eradication, the disease is largely robbed of its terrors. It is generally conceded that there is no certain specific against hog cholera. But the free and extensive use of good grass, roots and succulent feeds will do much to maintain a healthful condition, that will afford a reasonable safeguard against many forms of disease. The grazing characteristics of swine should by no means be allowed to become extinct, but cultivated and perpetuated as a most useful quality.

CORN AND PORK.—The two conspicuous and most successful features of American agriculture are corn and pork production. Our resources in this field, however, have scarcely begun to develop, and the quality of our products has not yet approached the standard of perfection. One has but to sit at an English breakfast table and partake of the celebrated Westphalia ham or delicious Wiltshire bacon to realize that our American pork products have not yet reached the standard of excellence demanded by the most exacting foreign markets. We produce a larger surplus of pork products than any other country, but it must be admitted that American pork is the cheapest product in the leading markets of the world.

Corn is primarily the hog feed of the greatest hog producing States, and no other food will displace it as an economical and practical ration for pork production. The inferior quality of American pork cannot be properly attributed to the corn ration, as is frequently claimed. Recent investigations by the government experiment stations and by practical feeders everywhere have demonstrated that corn, judiciously used in combination with other feeds to the extent of one-third or one-half the ration is not necessarily injurious to the quality of the bacon produced, provided other conditions are right.

QUALITIES.—The entire trend and effort of the American swine grower for about half a century has been in the direction of producing the broadest-backed, thickest, fattest hog that science, skill and human ingenuity could evolve. This process set in and continued during the greater part of its progress under conditions of high-priced lard, when fat backs were a prime quotation in all of our leading markets. The tendency of late has been in a different direction. Cottonseed products and other substitutes have largely displaced lard, and the tendency of the consumer, both at home and abroad, is decidedly in favor of leaner meat products of all kinds.

Fine grain, firmness of texture and comparatively even distribution of fat and lean, are the prime essentials in high-class pork products. These are the result, first of heredity, and second of judicious feeding of wholesome, flesh-forming feed products, succulent feeds, grass and abundant exercise. It is not to be expected that our country will in the near future, if ever, take rank with Denmark and Canada in the competition for the higher grades of bacon on the foreign markets; but the demand for the better pork products for our home and foreign markets has already manifested itself in such a way as to command the attention of the farmer and producer. The change will undoubtedly come as a result of the modification of the type of our present popular breeds, rather than through the bacon type, although there is already a rapidly growing demand for hogs of greater activity, vitality and vigor and more prolific breeding qualities.

THE BACON TYPE.—The objection that the hogs of the bacon type are not as economical producers as the more compact corn belt type, represented by our popular breeds, is not well founded. The evidence of recent investigation, supported by practical experience where accurate observations have been made, indicates quite conclusively that the modifications of the hog under domestication have been in the line of increasing his stomach contents and digestive capacity without materially increasing his digestive efficiency. Domestication has increased the length of the intestinal canal of the improved hog; this enables him to consume, digest and assimilate a larger quantity of feed, but it has not been demonstrated that his modified digestive organs do the work any more thoroughly than those of his wild ancestors.

THE MARKET.—The result of three years' investigation in determining the cost of pork production and the relative value of the finished products with various breeds of hogs at the Iowa experiment station

have been published in Bulletin 48, and may be summarized in the statement that there is no material difference in the cost of a pound of pork in the feed yard by different breeds. Of course the corn belt type fattens much more readily than the other, but they are not capable of making much, if any, greater gains in a given period or from a given amount of feed. The difference is due chiefly to the kind of product made from the feed rather than any variation as to the amount. The market demands have also changed in reference to the valuation put upon the different cuts; while the American breeds of swine were in process of formation and development, hams were the high-priced products. To-day they take second rank, and the higher priced cuts are the sides which produce the bacon. The width of back and development of the ham are therefore subordinate to the length, depth, fineness and smoothness of side, and I believe that our American breeds are certain to undergo a modification governed by these conditions in the near future.

THE DAIRY.

Official Testing of Cows in California by Means of the Babcock Test.

Written for the PACIFIC RURAL PRESS by J. E. ROADHOUSE of the University of California.

The Holstein-Friesian Association of America has chosen the Babcock test as the standard by which to determine the performance of thoroughbred cows, under the supervision of the various agricultural experiment stations. By this means the percentage of fat may be quickly and accurately determined and the amount of butter fat present in the milk computed without the necessity of separating and churning.

Any Holstein-Friesian breeder may send to the experiment station in his State for an authorized representative to supervise the test, without expense other than a nominal compensation for conducting the test, and traveling and accommodation expenses.

It is the duty of the official tester to stand near the cow during milking and assure himself that no fraud is practiced. He also weighs and tests the milk. The tester, usually a student in dairy husbandry, is generally a stranger to the owner of the animals and therefore is a disinterested party. The owner does not select nor employ him, as he is vouched for and paid by the station, although, of course, the owner pays the station for his services.

The following are the chief conditions of the test:

1. All tests are made for seven or more consecutive days and are based on the weight of milk and content of butter fat as determined by the Babcock test.
2. The station will provide its representative with glassware and scales for weighing the milk.
3. The cows shall be wholly under the control of the owner as regards feed and care, but shall be accessible to the representative at all times in company with the owner.
4. The owner shall furnish a statement of the name and Herd Book number of the cow, and the age at time of last calving. This is inaugurated in the report, a copy of which signed before a notary, both by the inspector and the owner, is sent to the secretary of Advanced Registry of Holstein Cattle, Mr. S. Hoxie, of Yorkville, New York.

A composite sample of each milking for the seven days is sent to each experiment station for a check test to be made by the instructor in dairy husbandry.

To further stimulate the Holstein breeders to improve their herds, the Association has offered prizes for the best performers of various ages during each year.

Besides its value in stimulating progress, this system of testing is of great advantage to both breeders and purchasers of Holstein cattle. At the present time purchasers demand officially authenticated information concerning the performance of animals before purchasing, and it is becoming more and more difficult to sell Holstein thoroughbreds without such records. The system has enjoyed great popularity and has proven so satisfactory that while only thirty-five seven-day tests were made in the year 1894-95, in the year 1901-02 601 seven-day tests were made, which is double the number for the previous year. A new feature, the thirty-day test, was added in 1901, which is an advantage over the record for a shorter period, as shown in the ability of the animal to continue in high production.

The early tests showed the Holsteins very great milkers, but somewhat lower in percentage of fat than some other breeds. Immediately those most interested set about to improve the quality as well as the quantity, which has been largely accomplished in some strains. At present among many good breeders a bull is not considered worthy to lead a herd of thoroughbreds unless, besides his own good form and his sire's good quality, his dam has produced twenty pounds of butter fat. Commercial butter contains 80% to 85% butter fat.

The first animal to be tested in California was the Holstein-Friesian cow Estepilla, No. 36042, owned by Jane L. Stanford, Vina, Cal., born June 13, 1893; last

calf dropped April 21, 1901; average per cent fat 3.42; seven days production milk, 417.0; butter fat, 14.249; highest per cent fat, 4.4; best 24-hour production, 62.4; butter fat, 2.5280; tested May 6, 1901, by Dr. LeRoy Anderson.

The Pierce Land & Stock Co. of San Francisco, whose ranch is situated on Rough and Ready island, near Stockton, seeing the advantages which accrue from officially tested cows, had a number of animals tested during the last three months. The tests were conducted by Dr. A. R. Ward and A. E. Roadhouse of the University of California. The company's herd consists of the Minnewawa herd of Holsteins formerly owned by Mrs. Eshelman-Sherman of Fresno and several importations of the best animals purchasable in the East.

The island conditions approximate somewhat closely in soil and pasture to those of Holland, where the Holstein-Friesian breed originated. The land is level and low—5 to 10 feet below the level of the river. The soil is composed of a layer of sandy loam with a peat subsoil. The pasturage consists of clover, alsike rye grass and alfalfa.

Of the cows tested four were in full form (five years old or over), two cows in four-year form (between four and five years old), four cows in three-year form (between three and four years), five cows in two-year form (between two and three years old). The production of milk and butter fat is as follows:

COWS IN FULL FORM (FIVE YEARS OR OVER).—Olympia Clay: Herd Book No. 42186; born Jan. 30, 1896; last calf, Dec. 30, 1901; average per cent butter fat, 2.74; seven-day production—milk, 526.6 pounds; butter fat, 14.5360 pounds; highest per cent fat, 3.6; highest twenty-four-hour production—milk, 77.7; butter fat, 2.2450 pounds.

Mattie Clay's Aaggie II: Herd Book No. 42170; born Jan. 18, 1895; last calf, June 28, 1902; average per cent fat, 3.74; seven-day production—milk, 499.1 pounds; butter fat, 19.1696 pounds; highest per cent fat, 5.4; best production for twenty-four hours—milk, 73.1 pounds; butter fat, 2.9323 pounds.

Aaggie Martin: Herd Book No. 42172; born April 1, 1896; last calf, June 9, 1902; average per cent fat, 3.21; seven day production—milk, 416.6; butter fat, 13.4009 pounds; highest per cent fat, 3.8; twenty-four-hour production—milk, 62.8; butter fat, 2.1528.

Western Duchess: Herd Book No. 40069; born April 9, 1895; last calf, May 11, 1902; average per cent fat, 2.9; seven-day production—milk, 387.8; butter fat, 13.0996 pounds; highest per cent fat, 4.1; highest twenty-four-hour production—milk, 57.4; butter fat, 2.1889 pounds.

FOUR-YEAR FORM.—Fidessa: Herd Book No. 43105; born June 15, 1897; last calf, June 3, 1902; average per cent fat (seven days), 3.5; milk, 570.7; butter fat, 20.0301 pounds; highest per cent fat, 4.8; milk, 89.3; butter fat, 3.2619 pounds; thirty days' production—milk, 2392.7; butter fat, 91.3488 pounds.

Minnewawa Salambo: Herd Book No. 47282; born May 7, 1898; last calf, June 29, 1902; seven-day production (from three teats)—milk, 403.1; butter fat, 12.8561; average test, 3.20; highest test, 3.9; highest twenty-four-hour production—milk, 59.8; butter fat, 1.9549 pounds.

THREE-YEAR FORM.—Minnewawa Louisa: Herd Book No. 47285; born June 8, 1898; last calf, March 15, 1902; average per cent fat, 3.09; seven-day production—milk, 474.0; butter fat, 14.6550 pounds; highest per cent fat, 3.7; highest twenty-four-hour production—milk, 69.1; butter fat, 2.1640 pounds.

Western Princess: Herd Book No. 49649; born April 25, 1899; last calf, May 6, 1902; seven-day production—milk, 294.3; butter fat, 10.1760 pounds; average per cent fat, 2.89; highest per cent fat, 4.0; highest twenty-four-hour production—milk, 44.1; butter fat, 1.5266 pounds.

Painted Lady: Herd Book No. 49648; born April 2, 1899; last calf, April 29, 1902; average per cent fat, 3.23; seven-day production—milk, 327.7; butter fat, 10.1439; highest per cent fat, 4.25; highest twenty-four-hour production—milk, 48.6; butter fat, 1.7406 pounds.

TWO-YEAR FORM.—Mary Ann De Kol: Herd Book No. 53294; born April 17, 1899; last calf, May 31, 1902; average per cent fat, 2.5; seven-day production—milk, 391.9; butter fat, 10.1075; highest twenty-four-hour production—milk, 59.4; per cent fat, 4.4; butter fat, 2.0792 pounds.

De Natsey Baker: Herd Book No. 55471; born April 2, 1900; last calf, June 9, 1902; average per cent fat, 3.42; seven-day production—milk, 401.01 pounds; butter fat, 13.7074 pounds; highest per cent fat, 4.1; highest twenty-four-hour production—milk, 59.0; butter fat, 2.0670; for thirty days—milk, 1689.9; butter fat, 56.5197 pounds.

Corona Arcturas: Herd Book No. 50966; born Dec. 4, 1899; last calf, June 28, 1902; average per cent butter fat, 3.22; seven-day production—milk, 344.3; butter fat, 11.2498 pounds; highest per cent butter fat, 3.8; highest twenty-four-hour production—milk, 50.7; butter fat, 1.7214 pounds.

Wynetta Princess: Herd Book No. 50972; born June 28, 1899; last calf, June 18, 1902; seven-day production—milk, 391.3; butter fat, 14.7647 pounds; average per cent fat, 3.70; highest per cent, 4.2; highest twenty-four-hour production—milk, 57.4; butter fat, 2.3427 pounds.

Segis Pietertje De Kol II: Herd Book No. 54504;

born May 2, 1900; last calf, May 23, 1902; average per cent fat, 2.8; seven-day production—milk, 355.6; butter fat, 10.1524 pounds; highest per cent fat, 3.6; highest twenty-four-hour production—milk, 53.9; butter fat, 1.6454 pounds.

Romeo Aggie Beauty: Herd Book No. 42192; born July 7, 1895; last calf, May 29, 1902; average per cent fat, 2.74; seven-day production—milk, 374.7; butter fat, 10.0862 pounds; highest per cent fat, 3.8; highest twenty-four-hour production—milk, 55.3; butter fat, 1.6479 pounds.

Wild West De Kol: Herd Book No. 56020; born July 29, 1900; last calf, April 14, 1902; average per cent fat, 3.3; seven-day production—milk, 279.7; butter fat, 8.4572 pounds; highest per cent fat, 3.55; best twenty-four-hour production—milk, 42.3; butter fat, 1.3196 pounds.

University of California, Berkeley, Aug. 1.

THE SUGAR BEET.

A Visit to a Beet Sugar Factory.

Written for the PACIFIC RURAL PRESS by M. E. DUDLEY, Ventura.

The Oxnard beet sugar factory is a landmark easily seen for many miles; its two giant steel smokestacks, each 36 feet in circumference, rise to an altitude of 154 feet and stand, like great, black sentinels, above its western portals.

Not all Californians realize the vastness of this enterprise that has risen among us. Only one other beet sugar factory—that of Claus Spreckels at Salinas—is larger; in modern methods and generous equipment it is unsurpassed by any.

THE MAIN BUILDING.—Under one colossal roof can be found machine and repair shops, blacksmith shops, an electric plant, an ice manufactory, scale rooms and engine rooms, mills for grinding lime, and store-rooms, any of which is large enough to be important, if operated alone. These are all essential or accessory to the great work of manufacturing from the sugar beets more than 16,000,000 pounds of pure, refined sugar produced here annually.

At the rear of the factory and connected with it are two large lime kilns, one for burning crude lime rock and the other for reburning the lime after it has been used in the refining processes of sugar making. This latter kiln is an invention belonging to the Oxnard Beet Sugar Co., and is the only one in use in the manufacture of beet sugar. By this process there is a great saving of lime during the season.

At this point six more huge smokestacks rear their imposing heights. In the adjacent yards great mountains of English coke and lime rock are seen during the beet campaign, placed here to feed the vertical kiln, towering a giant column, 95 feet above terra firma, and whose top furnishes a fine observation point from which to view the beautiful landscape on either hand.

Passing onward over cement floors toward the west, and at the rear of the factory proper, you find the boiler house, 100x300 feet. This contains twenty-eight boilers for generating steam, and is the power room of the factory. Here are found eight high-pressure and twenty low-pressure engines of 3000 H. P., which burn crude oil for fuel; this is supplied to them through pipes from three iron tanks, located by the railroad track at a distance of perhaps 230 yards, and which have a capacity of 33,000 barrels each.

Passing around to the south we enter a fine three-story brick edifice, connected with the factory at the third story by a covered corridor. Here are found commodious, well furnished offices, telegraph, stenograph and typewriter rooms, a chemical laboratory and a vault for valuables.

From the neat wooden entrance office at the gateway we turn to admire this mammoth pile, whose chiefest part rises 93 feet above its massive foundation and stretches to the right and left 401 feet. Its enormous bulk grows on you as you gaze. It is some colossal giant and it lies at rest. Whence shall we feed it and how prepare its food? Our guide says, "Come!" and we pass to the structure where its dainties are first received. It takes 2000 tons of material daily to satisfy its demands.

HOW THE BEETS ARE RECEIVED.—East of the factory are four parallel beet sheds or bins, each 350 feet in length, holding 1000 tons each. Here the topped beets from the field are first received with earth and roots clinging about them.

The large beet wagons which convey them to these sheds are provided with nets on which the load is placed in the field. When the wagons reach the bins these nets are grasped on one side by iron hooks attached to a beam above, which is moved by electricity. From the elevated driveway beside these bins the beets are then precipitated into these V-shaped receptacles.

At the base of each shed is a cement sluice or aqueduct, covered by small, detachable sections of planking. Through this canal, which slopes toward the factory, flows a stream of water; this water is received in pipes at the southern end of the beet bins from the condensers in the factory, and eventually reaches the sea through the sewers.

As the sections of planking are lifted, one by one, the beets fall into the channel below and are rapidly

floated to the eastern part or "beet end" of the factory. Here they are grasped by two semi-vertical beet screws and are quickly propelled upward to the beet washers. These are horizontal bins, 25 feet long, with perforated metal bottoms.

Hung on bearings is a huge shaft the entire length of each washer. On this are projecting arms placed at various angles, and as the shaft revolves the beets are tossed about in the water until all foreign matter is removed.

As the beets are pushed to the further extremity of each washer a sort of hand on the end of the revolving shaft forces them down two inclined chutes to the "beet elevators" below.

These elevators consist of a series of metal buckets, or baskets, on an endless chain, and deposit their burden at the top of the building in chutes connecting with two sets of automatic scales.

THE PROCESS.—When these scales indicate 1000 pounds each the beets are precipitated by their own weight into cutting machines, of which there are four. From the "slicers" the cosettes, or sliced beets, are forced into the "cosette conveyor," which consists of an endless belt run in a narrow, horizontal, wooden channel placed along the lines of tanks which are to receive the cosettes. These receptacles are called "diffusion cells," of which there are two batteries of fourteen cells each.

The "slicers" are so made that the beets are cut into long triangular-sided strips, that they may not pack too closely in the diffusion cells, where hot water is pumped over them. Each volume of water passes through nine volumes, or cells, of beets before being withdrawn to the diffusion measuring tank. This liquid, or "diffusion juice," holds in solution the greater part of the saccharine of the beet, and is of a dark brown color and disagreeable taste.

Each diffusion cell through which nine volumes of water passes contains in the beet pulp remaining only $\frac{1}{2}\%$ of saccharine.

This pulp makes excellent food for stock when dried and compressed, or when placed in silos, or even fed directly from the factory. The present season 6000 tons of beet pulp were stored by the American Beet Sugar Co. in silos on the factory grounds. Large quantities have also been shipped to Los Angeles and several other railroad points and siloed. Much of it during the beet campaign is sold fresh to farmers and stockmen at the very low rate of 10 cents per ton.

THE SUGAR.—We have followed the beet from the field to that part of the factory where occurs the separation of its component parts. The "diffusion juice" now begins its journey from the measuring tank into the first saturation or carbonation tanks; it is here mixed with saccharate, and carbonic acid gas is pumped through it until brought to the right degree of alkalinity.

From these tanks it is dropped into a "mixer," from which it is pumped through filter presses, in which the lime and other impurities remain. The juice which comes from these filter presses is a rich yellow color.

Now it passes onward to the second saturation; from here again through filter presses, where more lime and other impurities are removed, and the juice is changed to a pale yellow color. The liquid is now pumped up to the "sulphur boxes," where it is sulphured, and again filtered; thence it journeys to the "evaporators," where it is reduced from a thin juice to a thick one. From the evaporators the syrup is drawn into small tanks, is filtered through "bag filters" and again treated with chemicals. It now passes to the vacuum pans, crystallizes, and first becomes sugar. The substance is now dropped again into mixers, thence to the centrifugals, where the crystals are separated from the molasses. The syrup here passes from the centrifugals into tanks and is retreated by the Steffens process for extracting sugar from molasses.

The sugar is now dropped from the centrifugals scrolled to the elevators, thence to sugar bins, thence to granulators or dryers. It has now become the perfected product of the sugar beet—pure, granulated sugar. From the granulators it passes to the dry sugar bins, is returned to the first color, and packed in 100-pound bags for market.

As you look on its white beauty and admire, and glance along the space toward the eastward you are amazed to remember that fourteen hours since, only 400 feet distant, this beautiful article of commerce entered, soiled from the fields, firmly encased in the rude jackets of the sugar beet.

THE STOCK YARD.

Indications of Age in Cattle.

TO THE EDITOR:—Will you inform me of the different methods to tell the age of cattle? Do the same methods answer with male and female?—A CONSTANT READER, Guerneville.

There is a very satisfactory work published at the East entitled, "Age of Domestic Animals," by Dr. R. S. Huidekoper, a European veterinarian, which goes very elaborately into all signs of age in domestic animals of all kinds. The author expounds

teeth signs very accurately with copious illustrations, and otherwise such signs are hardly intelligible. Those who desire to be abreast of science in that line can secure the work through the PACIFIC RURAL PRESS for \$2.25 postpaid.

Probably all experienced breeders have acquired ability to very closely approximate the age of animals by signs which it would be difficult for them to describe. To the beginners the study of the horn is worth attention. On this subject we quote from Huidekoper's work with the remark that, as animals develop more rapidly in our favoring climate, the indications are liable to appear somewhat earlier in the animal's life. Sex is not widely different in this matter:

The bull has strong, stout, short, straight horns, dense in structure, which seem to be as much points of hold for his massive, heavy head as actual weapons in times of warfare; the female has longer, sharper, more delicate horns, designed to use in emergencies. The steer has horns which are a compromise between those of two sexes—longer than those of the bull and larger than those of the cow.

The horns have for a basement two cores, or conical, bony projections of porous structure, richly supplied with blood vessels, and containing air cells which communicate with the sinuses of the frontal, occipital and maxillary bones.

The cores are covered by a dense, fibrous, vascular membrane, from the outer face of which, corresponding to the skin, the horns grow. The horns themselves are conical tubes more or less curved, consisting of concentric layers of epithelial growth.

Soon after birth the calf shows two little, hard, rounded points at either side of the frontal bone, which slowly emerge from the skin. At eight or ten days the point is through the skin and shows the color which the horns will have later; at three weeks a distinct little flexible horn has appeared. At five or six months the horn has commenced to curve on its long axis and assume the direction it will have later. Up to this time, and during the first year, the horn is covered by an epidermic prolongation of the skin, similar to the covering of the hoof of the foal at birth, but by the twelfth to fifteenth month this covering has dried and scaled off, leaving the natural, shining, tough surface of the horn proper.

In the second year the horns start a fresh growth, and a small groove is found encircling it between the substances secreted the first year and that which developed in the second.

During the third year a similar activity in growth takes place, and a second groove is found marking the line between the two years' growth. These two grooves or circular furrows around the horn are not well marked and have been frequently overlooked, and all trace of them disappears as the animal becomes older.

From three years on, the growth of the horn is marked by a groove or furrow, much deeper and so distinct that they show between them a decided elevation or "ring" of horny substance, which forms an accurate basis for estimating the age of the animal. In an animal over three years of age we count all of the horn beyond the first groove as indicating three years, and add one year to its age for each groove and "ring" which is present toward the base of the horn.

The grooves are always better marked in the concavity of the horn than on the convex surface. In feeble, ill-nourished animals they are but slightly marked.

Many causes, however, tend to diminish the value of the "rings" and grooves in the estimation of age. In "show" cattle and in herds of cattle kept for show, the horns are frequently sand-papered, scraped and polished to give them the fine appearance of delicate texture, which, with that of the other integument, indicates the similar condition of the mammary gland for secreting milk and of the connective tissue for forming fat. Dealers scrape the horns to destroy the evidences of age in the animals which they have for sale. In old cows there is an atrophy of growth and an apparent contraction of the base of the horn; the "rings" and grooves are much less distinctly marked and may be indistinguishable.

In the first four years the teeth are the most valuable indications of age, from four to ten years the horns furnish the more accurate signs, and after ten years a careful comparison of both is required to determine approximately the number of years which have passed.

THE almond growers of Guinda have sold their crop in a lump to Rosenberg Bros., says the Woodland Democrat. It is estimated that there are about ninety tons, the product of about 150 acres, at a fraction of over 11c per pound.

PORTER BROS. have contracted for the entire pear crops on the D. S. Cone and N. P. Chipman ranches. Both crops will be dried, and in that state it is estimated that there will be 300,000 pounds.

THE VETERINARIAN.

Lung Worms in Calves.

TO THE EDITOR:—I had a calf six months old and as large as other calves of that age. It was a weak calf when born and was hardly strong enough to suck the first two weeks. It appeared to have something in its throat or nostrils. It has always been weak. When three months old a few bare spots appeared on its body. Its hair seemed more like wool. It showed signs of stiffness in the front legs; the hair came off the knees and joints of front and hind legs and stiffness increased. When walking 100 yards it frothed at the mouth. It seems to look quite bright, but has a haunted look when I drive it. It eats apparently well, but I believe it drinks with difficulty. I would like to know what is the matter with it, and a remedy.—C. E. CARTER, Bradley.

TO THE EDITOR:—In my travels I found some calves near Lindenden, San Joaquin county, that had a contagious disease. They droop their heads to the ground; their ears lop down; they have a cough and discharge matter from nose and eyes. The disease proves fatal in from two days to two or three weeks.—CORRESPONDENT, San Joaquin.

The disease in these cases is called husk or hoose, and the cause is the presence of worms in the air passages. It is an old disease, but one of which practicable cure is not certain or easy. It is pretty widely spread over the State, and the following accounts may be of interest.

Dr. T. E. Twining of Fresno, in the PACIFIC RURAL PRESS of May 25, 1901, gave the following sketch of the trouble:

The disease is now known to exist in several sections of the State—in Los Angeles county, in the vicinity of Clearwater, and around Ferndale, in Humboldt county, from which place it was brought to Fresno county.

A prominent Los Angeles veterinarian stated that he believed the trouble to have existed in that section for years, but was pronounced distemper, no one having taken the trouble to make a post-mortem until recently, when the true cause was found. As found in Fresno county the disease is very fatal, having killed nearly 400 head of calves out of a herd of 550 in eight weeks.

CAUSE.—While there are eight species of strongyli, which live in the air passages of domestic animals (three kinds having been found in the lungs of calves), that producing the disease in Fresno county calves has been recognized as the strongylus micrurus, a nematoid or hair-like worm, from $\frac{1}{2}$ to 3 inches in length. The female is longer than the male. It is believed that the embryos directly thrown out by the females into the bronchi of their host do not develop there, but must be expelled from the animal in order to pass the first stages of their existence. They will live in water for some months and it has been stated that the embryo, in a certain stage, will become revived on being placed in water after having been dried a year or more.

Many theories have been given to account for the manner in which the worm enters the bronchi, but none are satisfactory. It is very probable, however, that the embryos enter the body with water or along with the grass of damp pastures.

SYMPTOMS.—When the worms are not very numerous the symptoms are infrequent and slight cough, which gradually grows stronger and husky, ending in paroxysms and suffocation. The coughing expels from the mouth or nasal cavities mucus sometimes streaked with blood and containing worms and embryos. Should the disease progress slowly, the symptoms are milder, but the animal rapidly emaciates, owing to disordered nutrition, loss of appetite, etc. The symp-

toms and appearances have often been mistaken for contagious pleuro-pneumonia, but the presence of the worms and embryos in the expectoration is the criterion of the disease.

TREATMENT.—Owing to the hardness of the worm the various kinds of treatment used have availed but little. Internal treatment, inhalations and intratracheal injections have been used, the inhalations appearing to do the most good, and when combined with internal treatment (tonics) appears to be of much benefit, and hopes are entertained of making some cures. Intratracheal injections of either chloroform, turpentine and carbolic acid, or oil of amber, appear to do some good, but where any of the fluids got into tissues it caused considerable swelling and abscess to follow. The inhalations appearing to give the best results were mixtures of chloroform, or ether, and oils of turpentine and amber, equal parts, also a little formaldehyde. From one to two teaspoonfuls of this mixture was poured into the nostrils (the head being elevated) and allowed to vaporize. Any bitter, stimulating tonic may be given which arouses the digestive functions and aids the animal to reach a period of elimination of the parasites.

Owing to the unsatisfactory results to be obtained from any treatment, it is of obvious importance to prevent the spread of the disease as much as possible. Our ignorance of the life history of the parasite renders any prophylactic measures rather uncertain, recognizing, however, the utility of drying and draining damp pastures, and the destruction of the lungs of the animals killed by the malady. Until more is known about the worm and its manner of entering the beast we cannot expect to cure the diseased animals, nor prevent young animals from contracting the disease when placed in infected pastures.

A little later in our columns Mr. C. H. Dwinelle gave the following account of experience with similar parasitic worms in sheep:

Some years ago I had a fine lot of lambs attacked by a mysterious malady. They were Shropshire and Shropshire-Merino crossbred stock, and were running on rather low land in Sonoma county. The animals attacked coughed severely, and there was a frothy discharge from the nostrils, which was sometimes streaked with blood. They began to die at an alarming rate. On examining the lungs of one that had just died they were found to be badly inflamed and in the air passages were many hair-like white worms, evidently a species of strongylus.

Knowing that a bit of gum camphor the size of a pea would cure a chicken of "the gapes," which is also caused by a strongylus, it was surmised that a suitable dose of the same medicine might benefit the lambs.

A supply of gum camphor was procured, coarsely pulverized, and mixed with an equal amount of salt. The lambs were driven into the barn and hustled about until the afflicted ones began to cough. These were caught and each one given a spoonful of the camphor and salt mixture, the mouth being held open and the medicine put on the back part of the tongue. Each lamb so treated was marked on the top of the head with tar. Two or three days later the flock was put through the same treatment, but very few, if any, of the tarred lambs coughed that time, showing a quick action of the remedy. Then orders were given to dose the whole flock, as it was not much more trouble than to pick out the afflicted ones, and prevention is certainly worth as much as cure in such a case.

After adopting this remedy but one lamb died of the lung worms, and that was a weakling to begin with. Three or four doses at intervals of two or three days seemed to be all that was needed.

The quick action and efficiency of the remedy was surprising, and led to the conclusion that camphor is a specific for lung worms in domestic animals. If this were generally known, and the symptoms of the parasites generally

understood, there need be no serious losses from lung worms.

Moderate doses of turpentine, mixed with salt, might be quite as good as the camphor, as it also cures "gapes" in chickens. The easy and efficient way to apply either remedy seems to be through the digestive system, and not by inhalation. The lung worm did not again make itself troublesome on that farm while it was used by the writer during a period of several years.

It seems to be the decision of the veterinary profession that the local establishment of parasitic worms can be best treated by an injection of proper vermifuge. This injection into the windpipe can be made with an ordinary black leg syringe. It is not a difficult matter to locate the windpipe in the neck and prick into it with the syringe. The medicine should be injected slowly, but the operation preferably should be performed by a veterinarian. Use the following in three doses, on as many days, allowing two days interval between each dose: Oil turpentine 6 drams, carbolic acid $1\frac{1}{2}$ dram, glycerine $1\frac{1}{2}$ dram, chloroform $1\frac{1}{2}$ dram, olive oil 6 drams.

Give in the feed daily one-half teaspoonful of powdered copperas and powdered nux vomica.

The cause and nature of the stiffness in the fore legs mentioned by the first correspondent can not be determined by the facts at hand.

Progress of Pasteur's Prevention of Black Leg.

Mr. Harold Sorby of Chicago writes for the Texas Live Stock Journal about the origin and progress of the successful method of reducing losses by black leg as follows:

I have read with much interest your recent article upon "Prevention of Black Leg," and have to thank you for the tribute you pay to Arloing, Cornevin and Thomas, as it is to them that so much credit is due for the discovery of black leg vaccine. Indeed, it is the vaccine made by these eminent scientists that has been used in Europe upon several million head of calves during the past eighteen years, and it is the very same product that was introduced into the United States and Canada by the Pasteur Vaccine Co. in the early part of 1895 and the success of which is too well known to need comment at this time. Indeed, it is entirely due to the success of the standard and original black leg vaccine made by Arloing, Cornevin and Thomas, and supplied by the Pasteur Vaccine Co., that other parties have imitated them.

However, when giving credit where credit is due, we must not overlook the great service rendered by the immortal Pasteur, who is known as the father of bacteriology, which includes all the antitoxin and vaccine treatment of to-day. His work began in 1848 and ended with his death in 1895. Hundreds of industries are indebted to him and so is the world at large. Pasteur's name is probably the best known to the public on account of his discovery of the treatment of hydrophobia. Working under Pasteur's direction and in his laboratories, Roux and Yersin discovered the toxin of diphtheria, which led a year later (1894) to the discovery of the diphtheria antitoxin; but Pasteur's name is best known to the cattle raisers on account of his discov-

ery of the live stock vaccines. Pasteur's vaccine for protecting swine against erysipelas is used upon millions of animals every year in Europe, but it is not required in this country, as the disease does not exist. Pasteur's vaccine for the prevention of anthrax or charbon is known throughout the civilized world, and it is used upon millions of animals every year. Since Pasteur's anthrax vaccine was introduced by the Pasteur Vaccine Co. into the United States in 1895 it has been successfully used upon several million animals in the anthrax districts, including the coast country of Texas.

Anthrax, black leg and several other diseases were formerly supposed to be different forms of the same disease and it was due to Pasteur's work that the necessary distinction was made and the difference in the germs discovered. Black leg is still technically called symptomatic anthrax, and it was only a step from Pasteur's discovery of the anthrax vaccine to the discovery of the black leg vaccine, and Pasteur's name is forever associated with both. The name of the Pasteur Vaccine Co. will go down to posterity as the pioneer and leader of live stock vaccination on the continent of North America, namely, the United States, Canada and Mexico.

In order to show on what authority I recite the foregoing facts perhaps I may be allowed to say that I have the honor to represent the Pasteur Institute of Paris and Arloing and Thomas. Moreover, I have also had the honor of managing the affairs of the Pasteur Vaccine Co. in North America since its foundation nearly eight years ago, and in that capacity it has been a source of satisfaction to me to watch the rapid progress of live stock vaccination on this continent, with its corresponding benefits; for, although only 5000 animals were protected against anthrax or black leg by vaccination in 1895, the number in 1901 was nearly 2,000,000. Those of your readers who are acquainted with the destructive nature of these diseases will readily be able to calculate how many millions of dollars have been saved on the continent of North America alone through Pasteur's work, and how greatly the cattle raisers are indebted to him and his associates.

Leg and Body Wash.



When it comes to stiffness and soreness of muscles, tendons, etc., nothing equals

Tuttle's Elixir

for restoring normal conditions. Apply to the body as a mild sponge bath and put on light blanket. Sponge the legs and put on light bandages.

Used and Endorsed by Adams Express Company.

Tuttle's American Condition Powders

—A specific for impure blood and all diseases arising therefrom. TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.

Tuttle's Elixir Co., 83 Beverly St., Boston, Mass.

437 O'Farrell St., San Francisco, Cal.

Beware of so-called Elixirs—none genuine but Tuttle's.

Avoid all blisters; they offer only temporary relief, if any.

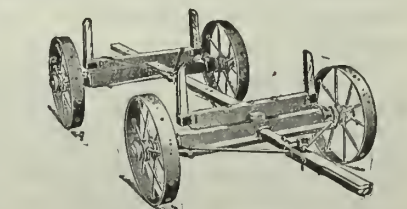


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THE HOME CIRCLE.

An Old-Fashioned Boy.

Oh, for a glimpse of a natural boy—
A boy with freckled face,
With forehead white 'neath tangled hair
And limbs devoid of grace.

Whose feet toe in, while his elbows flare;
Whose knees are patched all ways;
Who turns as red as a lobster when
You give him a word of praise.

A boy who's born with an appetite,
Who seeks the pantry shelf
To eat his "piece" with sounding smack—
Who isn't gone on himself.

A "Robinson Crusoe" reading boy,
Whose pockets bulge with trash;
Who knows the use of rod and gun,
And where the brook trout splash.

It's true he'll sit in the easiest chair,
With his hat on his touseled head;
That his hands and feet are everywhere,
For youth must have room to spread.

But he doesn't dub his father "old man,"
Nor deny his mother's call,
Nor ridicule what his elders say,
Or think that he knows it all.

A rough and wholesome natural boy
Of a good, old-fashioned clay;
God bless him, if he's still on earth,
For he'll make a man some day.

—Detroit Free Press.

Harriet's Huckleberries.

"Hattie, you fly around like a bit of scandal in a country village. What ails you this morning?" cried Polly Fanning, as her elder sister banged the tins about the buttery with an apparently unnecessary clatter.

Harriet poked her head around the door. Her thin cheeks were flushed with excitement and exertion, and her thoughtful brown eyes were unnaturally large and bright.

"I'm looking for pails," she replied.

"We used to have a lot of them."

"Pails!" echoed Polly, in amazement. "What do you want with pails? The big eight-quart is up in the garret. I filled it with water, and put it there for a fire-extinguisher. The six-quart is down in the cellar full of tomatoes."

A few moments later a loud swash of water from the attic was followed by a howl of indignation underneath the parlor window, and a small boy, wrathful and dripping, tore into the kitchen.

"Who done it?" he yelled, jumping up and down before his astonished aunt. "Who done it, I say?"

"I didn't, Ellis; it must have been your Aunt Hattie—she poured my pail of water on you by mistake, I guess. It's too bad. Come, I'll help you change your things. Why, you are not very wet after all. It sort of spattered you."

"I'm soaked through and through," protested the boy, bitterly. "I'm 'most drowned. Oh, ain't she mean though!"

"She didn't intend to, Ellis. Don't begin to cry now. Get a doughnut, and run out in the sun—you'll dry off in a few minutes."

"It'll take two doughnuts to dry me off," said the eight-year-old, looking more cheerful; "three maybe," he added, rather doubtfully.

"Well, you may have two small ones. Remember, I'll trust you to pick them out, Ellis."

The abused one presently sneaked out to the woodshed, tightly clutching the two largest cakes the pan had contained. "I wasn't goin' to pick 'em over to find the little ones," he remarked to his easily soothed conscience.

"What is the matter with the boy?" asked Harriet, descending. "I certainly heard him scream."

"You doused him, that's all. He is all right now. Do sit down and tell me what is going on—a picnic?"

"Picnic! No! Business! Huckleberries!" ejaculated the other sitting on the dresser and breathing fast. "There's no time to lose, either! The pasture lot is full of them—just right to pick, and nobody knows it. I found it out this morning coming back from Savage's. I want you and Ellis and

'Gal' right away. We can get oceans of them by night."

Polly's mild eyes, so like her mother's, opened wide as she looked searchingly at her sister.

"You crazy thing!" she said. "Go up yourself, and get two or three quarts—that's all we can eat."

"Eat!" burst out Harriet. "I'm not going to eat them. I'm going to sell them, Polly."

"Sell them!" gasped her companion, in consternation. "Oh, Hattie, you can't peddle berries."

Harriet hopped off the dresser. "I can!" she said, decidedly. "And what's more, I'm going to! You are going with me, too. We need every cent we can pick up—you know that, Polly Fanning. Think of mother, and what she needs. Think of all we can get for a few dollars. Put your pride in your pocket, the same as I have, and start right in. If I am willing to do it, you should be. Goodness knows—" She stopped and swallowed, with tears in her eyes.

"I'll go," said her sister quickly. "You are a better woman than I am, Harriet." She stepped over and kissed the now streaming cheeks. "I'll get Mrs. Dabney to stay with mother, and hunt up 'Gal.' He is over in the meadow haying, but he can leave it. We can be ready in half an hour."

Harriet tossed her head, and felt for her handkerchief. "I'm a fool to cry—but I hate it just as much as you do. Mother needn't know. She would be so upset. Let's bang right along and not mind. We can pretend it's fun. It will be easier." She held her sister close for a moment. "Come," she said; "let's get started."

"Berryin', hey?" queried old Gamaliel Hooker. "Goin' ter sell 'em, hey? Course I'll go. I use ter be the best picker ever was. Goin' ter hitch up airy an' drive ter town with 'em, yer say."

He eyed Polly narrowly with a queer look blended with curiosity and affection. "Ye're two good gals," he said, with a sort of cluck, "an' I'm proud on ye. Does Mis' Fannin' know what ye're up ter?"

"No; we thought we wouldn't tell her, Gal."

"I wouldn't," said the old man; "might upsother, bein' so weakly an' an' notional. Run along now. I'll be right up to the house."

"He understands," thought the girl, as she went back. "Bless his heart! He may be only our hired man but he is a gentleman all the same. I honestly think he really loves us. Why I don't believe anything would induce him to leave. I don't see how he does so much."

Never were huckleberries so fit for picking as those fat, black, shining fellows loading the low bushes in the mountain pasture that pleasant afternoon in the early days of August. Never did nimble fingers work more industriously to fill the big tin pails with the wholesome spoil. To be sure, the collection of Ellis Wells had to be kept apart, being motley and full of sticks. The lips of the youthful Ellis were badly stained, and his round countenance somewhat streaked with purple, long before the sun sinking in the west warned his absorbed elders that their work must cease.

The tongue of Gamaliel Hooker had wagged cheerfully, and with hearty encouragement, keeping the two women in a state of constant merriment, as his drollery and tales of the "berry-pickin'" of his long ago lightened their hearts and labors.

The light, drifting clouds had given them comfortable alternations of sun and shade, and the dreaded afternoon in the heat had passed as a grateful relief from the humdrum household duties of the day.

"It's lucky we brought a big lunch," remarked Polly, as they prepared to start homeward. "I think Ellis has refreshed himself regularly every hour on what was left over. Every scrap is gone. Well, he has been contented, and had a good time. I'll be sorry when Frances sends for him next month."

"He's a good young 'un," observed Gal. "His appetite's mighty, but that's the way with boys. He must hev

picked two quarts an' e't about three. Goin' ter take him along to-morrow?"

"No sir!" cried Harriet. "He stays with his grandmother and you."

"I'll look after him," said the man.

"Yer ma'll feed him everything in the house of she's let to. Now I'll pick over yer berries an' fix 'em fer yer. Ye've got supper ter git an' then go ter bed airy. I'll see ter it ye're started right in the mornin'."

Polly patted him on the arm. "You are a comfort in life Gal," she said. "I don't know what we should do without you."

"Sho!" said the old fellow, embarrassed. "I don't do nothin'! Here we are hum ag'in, an' we had gre't pickin' an' a good time. Supper'll be ready in about half an' hour, I s'pose."

He carried in the berries, then walked out to the barn. "Two likely gals, an' pretty," he ruminated, "an' good. How they hev growed up. Why, why! Hattie's 'most twenty-seven years old, an' little Polly's two years younger. Don't seem's ef it could be. An' I toted 'em 'round when they wan't knee-high. Their father—" He picks up a hayfork, and thrust it savagely into the mow. "Dum it!" he muttered, "it don't seem right! Peddlin' berries—dum! An' three years ago we was all comfortable af. Then Sam had ter die. Last words he says ter me was, 'Gal, do what ye kin fer 'em. I hain't left much but the farm an' a good name.' An' little by little we've run down ter peddlin' berries. I didn't reely sense it afore. An' the old lady's never been the same, an' now she's roomatic."

"Where's young Cutter, I wanter know," his thoughts wandered on. "I thought sure he 'an Hattie would make a match, but they fell out somehow. Now ef they hadn't it would hev all come out nice an' easy. His old man's died an' left him well fixed—big farm, an' money, too. Wonder what 'twas they fit about? None of my business, but I'd like to know."

Gamaliel jammed a forkful of hay into the horse's manger. "Eat, yer old sinner," he observed; "ye're goin' ter town to-morrow a-peddlin'. Ef ye knowed it ye'd run away, I bet. Old Doctor Belton gin ye to Mis' Fannin' ten years ago come Thanksgiving. I kin see him now jest the way he done it. 'Here darter,' says he, 'this colt is yer own. He comes of as good a fam'ly in his line as we do in ourn. Remember thet, Maria,' says he, 'an' treat him accordin'.'"

"Lord! but them Beltons was high-toned. It took the doctor three years to forgive Sam fer bein' a farmer. 'Twasn't his fault thet Mis' Fannin' up an' said she'd marry him or nobody. Whoa! Back up a little Jason!"

The patient blue-eyed crippled mother was delighted that her girls had so enjoyed their little picnic. They must go often. So they were to drive to town the next day to do some errands. Perhaps they would meet some of her old friends. The girls winced. If they had time they might call on Mrs. Dennard. She was still living in the old homestead. The girls shuddered. They watched the fine cut face in the dim glow of the shaded lamp as she rambled on about her girlhood, then, stroking the soft silvery hair, kissed the faded cheeks good-night.

"She doesn't realize it," said Harriet, solemnly. "She lives so much in the past now that her present existence is like a dream. How will it end, Polly?"

Her sister shook her head. "We can only wait," she replied.

The morning dawned bright and cool, and the start was made long before their prospective customers thought of leaving their beds.

Gal had carefully covered the pails from view, and there was nothing to indicate the object of their expedition. "I slipped in a couple of broilers," whispered the old man, just as Harriet took up the reins. "Ye kin git fifty cents apiece fer 'em."

The two drove away with forced smiles and mirthless farewells, and traversed a mile before either spoke.

"Berries!" observed the elder sister, at last, with a hard little ring in her voice.

"Broilers!" replied Polly, mourn-

fully. Then they both laughed. It was not a joyful sound, though, but the sort of laugh one gives when a joke is not understood, and appreciation is expected.

As they turned a bend in the road a man with a spirited horse approached them.

"Mercy!" cried Polly; "it's Andrew Cutter!" She glanced anxiously at her sister. Harriet's face was set as if carved in stone; her eyes staring straight at her horse's ears. Then the seldom-used whip fell sharply on Jason's flanks.

"Don't notice him, Polly," whispered the elder girl.

It was always a mistake to let the lash fall upon Jason. His proud spirit and ancient legs alike rebelled. Giving a snort of wrath, he jumped, reared up, and his driver, pulling hard in her excitement, lost her balance, and fell ingloriously in the dust. There was a shock, a clatter, an exclamation of horror, and from the wagon-box a stream of huckleberries rolled into the road.

Polly never knew just how it happened, but a minute afterward she was holding Andrew Cutter's horse, while that gentleman and Harriet assisted the entangled Jason to his feet.

Somehow they were a long time adjusting the harness on the off side. Polly peered around at them, then looked away quickly, and drove a little down the road.

"He certainly kissed her, and she let him," she thought, excitedly. "They have made up at last! "Oh, isn't it splendid!"

Ten minutes later the Fanning sisters went on their way back to Prattville, and a tall man with three pails of huckleberries and a pair of broilers in the back of his buggy, drove slowly to his home with a happy face.

Polly held something in her hand, something that crisped and cracked as she squeezed it. "He said it was to get things for mother, Hattie," she whispered, apologetically. "Was it all right to take it?"

"I—I guess so," replied Harriet, in a far-away voice. "I guess everything's all right."

"Them gals went an' sold pails an' all," wondered Gamaliel Hooker, as he rubbed Jason down that afternoon. "They must hev done well, though, from the stuff they fetched back. Didn't ferget the old man, neither," he added, taking a new pipe from his pocket and gazing at it rapturously.

"Hello! If there ain't Andrew Cutter drivin' inter the yard. What's he comin' fer, I wanter know?"—Exchange.

Tom—I have seen the girl I want to marry. I stood behind her at the window this morning and it took her seven minutes to buy a 5-cent elevated railroad ticket.

Kitty—Did that make you want to marry her?

Tom—Yes; I figured she could never spend my income at that rate.

An acquaintance saluted Oliver Herford once with a slap on the shoulder, shaking off his glasses.

"Don't you know me?" asked the muscular acquaintance.

"I can not see your face," answered Herford, politely, "and I don't recognize your voice; but your manner is certainly familiar."

"You admit you stole the melons?" said the judge. "Oh, yes, suh—I stoled um!" "And yet you ask for mercy?" "Yes, suh—kase de white man kotched me fo' I had a chance ter eat um!"

"How do you spell needle, Bobby?" asked the teacher. "N-e-i-d-l-e, needle," was the reply. "Wrong," said the teacher, "there is no 'i' in needle." "Well, then, 'tain't a good needle."

He—"I love you, darling. I swear it by those lofty elms in yonder park." She—"Don't swear by those, Reginald." He—"Why not." She—"Because those trees are slippery elms."

How to Avoid Baldness.

The writer of this squib has much hair on his head. As a young man it was black as a crow's wing, curly, the envy of rivals and the despair of imitators; as a middle-aged man, iron gray, thick, luxuriant, with no disposition to grow less. How does it happen that this one individual is singled out from all the rest to be the possessor of so much hair? Has it been the use of hair tonics? Is it the result of frequent shampoos by a barber? Has he been spending money for some favorite hair restorer? Nothing of the sort. None of these things has happened. It has been brought about neither by wise management nor heredity. This is the way it happened: The head upon which this luxuriant hair grows is of long diameter from before backward, but of short diameter from side to side. That is to say, a long, thin head, with rather hollow temples. This makes it impossible for him to buy a hat that fits tightly to his head. His head being so long, he is obliged to wear a 7½, which is always too wide for his thin head. He has probably never worn a hat in his life that fitted tightly over the temple, says Medical Talk.

Well, what has all this to do with luxuriant hair? It has much to do with it. The temporal arteries that supply the scalp with blood run up the side of the temples. The average person wears a hat that fits tightly over the temples. This constriction of the arteries and veins that supply the circulation of the blood and the pressure of the hat upon these blood vessels cut off in part the circulation of the blood to the scalp. This makes the hair unhealthy and incline to drop out. Bald-headedness comes on prematurely, but in case of the long-headed person we are describing no hat could be found that would fit tightly across the temples.

It was no wisdom of his that preserved his hair, but merely the accidental shape of his head. He had always been obliged to wear a hat that touched the forehead and back of the head. This left the circulation of the blood free to the scalp. Hence the bristling, rugged, healthy mop of hair on his head. Each hair stays in its place with the tenacity of a pine stump. A pound weight would not be sufficient to pull a single hair.

Now, if there is any lesson to be learned from all this, it is simply to avoid wearing anything on the head that presses the temples. This is probably the reason that women have a better growth of hair. It is rare, indeed, to see a baldheaded woman. It is very common to see a baldheaded man. Women's hats are worn as ornaments rather than for protection. They rarely touch the head at all. Men wear hats tightly clasped about the head, interfering with the circulation of the scalp. This is why they are bald. They ought to be bald if they don't know any better. Doubtless they will continue to be bald in spite of this article or anything else that can be written. Roundheaded men are bound to become baldheaded, simply because their hats hug tightly to their heads.

They Got the Shell.

A story from which one might draw several morals was recently printed in the New York Times. It may suggest, at least, the wisdom of thinking twice before consulting a lawyer when there is little at stake.

The two men were ushered into the private office the other day, and stood in silence before the lawyer.

"Well?" said he.

"You ask him," urged one of the men in a hoarse whisper.

"Wait a minute," counseled the other. "Maybe he'll guess it."

"Come, come, gentlemen, my time is valuable," interrupted the lawyer.

"We are twin brothers," chorused the two, "and we thought you'd have guessed it."

"Is that all?" asked the lawyer, severely.

"No," continued one of the strange pair. "We want to ask you a ques-

tion. A relative died a short time ago. We were his only heirs. He left a paper, saying that his oldest surviving relative was to have all his property; but neither of us is the oldest. So what are we going to do?"

"How much did he leave?" asked the lawyer.

"Seven dollars!" cried both in concert.

"Divide it," said the lawyer.

"What is your fee?" asked one.

"Seven dollars."

The two men paid the fee between them and departed, relieved of a great mental burden.

DOMESTIC ECONOMY.

Domestic Hints.

PEA SALAD.—Drain the liquid off a can of peas, add a cupful of celery cut into dice, two hard-boiled eggs cut into slices, and pour sufficient mayonnaise over the mixture to moisten well.

EGG GRUEL.—Beat up the whites of three eggs to a stiff froth and stir them into a cupful of fresh barley gruel, allow it to stand on the fire a few minutes without boiling, then add any flavoring desired. Turn it into a mould; serve cold with cream.

APPLE SAUCE.—Cut, peel and quarter the apples. Cook in a granite kettle with enough water to prevent burning. Cook till very tender, then add sugar to taste. If preferred, they may be cooked longer, and worked through a fine sieve or colander.

STEWED TOMATOES.—Dip the tomatoes into boiling water. Remove the skins and cut into quarters. Stew in a granite kettle one hour. Season with pepper, salt and butter. If desired, they may be sweetened with a little sugar and thickened with cracker dust.

BLUEFISH SALAD.—Three cups cold flaked bluefish, one-half teaspoonful of salt, one-fourth teaspoonful white pepper, one-fourth cup of olive oil, one tablespoonful of vinegar. Flake the bluefish neatly and marinate for an hour with a French dressing made from the oil, vinegar and seasonings. Arrange on a nest of lettuce and serve with mayonnaise garnished with chopped olives.

SPANISH MACKEREL.—Broil the mackerel on both sides; place it on a hot platter and make the following sauce: *Beurre Noir*—Put two tablespoonfuls of butter in a frying pan; when melted, add one tablespoonful of vinegar, one tablespoonful of chopped parsley, one teaspoonful of lemon juice, one-half teaspoonful of salt, one-quarter of a teaspoonful of pepper. Boil up once and turn over the fish.

PICKLED WALNUTS.—Take the walnuts when they are well filled out, but tender. Pierce each one with a strong needle three or four times and lay them in a brine which completely dissolves its salt, changing for fresh every day for nine days, then spread in the air till they become black. Put them in crocks and pour over this mixture, boiling hot: A gallon of vinegar,

an ounce each of ginger root, allspice, mace and whole cloves, and add two ounces of peppercorns, boiled altogether for ten minutes. Cover, pressing the nuts under the vinegar with a plate, and let them stand six weeks before using.

MOCK OYSTERS OF GREEN CORN.—A pint of grated corn, a cup of flour, one egg, two ounces of butter, three tablespoonfuls of milk, and salt and pepper to taste. Mix well and drop from a spoon in oblong cakes—to look as much like oysters as possible—into hot butter fry brown on both sides. Serve on a platter and garnish with parsley. These may also be made of canned corn by pressing it through a colander with a potato masher to separate the hulls from it.

ENGLISH PLUM PUDDING.—Two pounds of raisins, one pound of currants, one pound of citron, half pound of almonds, one pound of butter, one pound of flour, one pound of brown sugar, one teaspoonful each of ground cinnamon, cloves, allspice, ginger and nutmeg, half a pint of brandy and wine mixed and one dozen eggs. Boil six hours. Keep water boiling by the side of pudding boiler all the time, and continually refill as the water evaporates. In preparing the pudding have all the fruit stoned and cut, but not too fine, the almonds blanched and chopped. Incorporate all the ingredients well together before adding the eggs and spirits, and beat the mixture well together for at least an hour—the longer the better.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Aug. 13, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	68 3/4 @ 69 1/4	67 3/4 @ 68 1/4
Thursday.....	69 3/4 @ 68 3/4	68 3/4 @ 67 3/4
Friday.....	68 3/4 @ 67 3/4	67 3/4 @ 66 3/4
Saturday.....	68 3/4 @ 67 3/4	67 3/4 @ 66 3/4
Monday.....	68 3/4 @ 67 3/4	67 3/4 @ 66 3/4
Tuesday.....	67 3/4 @ 66 3/4	66 3/4 @ 65 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	31 1/4 @ 32 1/4	30 1/4 @ 31 1/4
Thursday.....	32 1/4 @ 31 1/4	31 1/4 @ 30 1/4
Friday.....	31 1/4 @ 30 1/4	30 1/4 @ 29 1/4
Saturday.....	31 1/4 @ 30 1/4	30 1/4 @ 29 1/4
Monday.....	30 1/4 @ 29 1/4	29 1/4 @ 28 1/4
Tuesday.....	29 1/4 @ 28 1/4	28 1/4 @ 27 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 13 1/4 @ —	\$1 16 @ —
Friday.....	1 13 @ 1 11 1/4	1 15 1/4 @ 1 14 1/4
Saturday.....	1 11 1/4 @ 1 12 1/4	1 14 1/4 @ 1 13 1/4
Monday.....	1 12 @ 1 11 1/4	1 14 1/4 @ 1 13 1/4
Tuesday.....	1 12 1/4 @ 1 13 1/4	1 14 1/4 @ 1 15 1/4
Wednesday.....	1 13 1/4 @ 1 14 1/4	1 15 1/4 @ —

WHEAT.

While there is considerable California wheat changing hands, not only for export, but also for local milling and speculative account, most of the trading has been consummated in the interior. This is not unusual, but the proportion of interior huying appears to be more than ordinarily heavy this season. Values for spot wheat have varied very little during the week under review. For round lots of desirable quality and advantageously located, fully as good figures were obtainable as at any time the current season, competition among buyers being much more pronounced on offerings of this description than on small lots of irregular quality. The market displayed no noteworthy weakness, still on small parcels, particularly where the quality was not of the best, it was not at all times possible to secure prompt custom at full current values. The outward movement is on the increase, but is still of light proportions. There is strong probability, however, that there will be a much more liberal clearing of cargoes in the near future than has been experienced lately. Ships are in good supply and the freight market is lacking in firmness. Latest spot charters reported have been at 25 shillings for desirable iron ships to take wheat to Europe, usual option as to destination. Some ships have been arriving under charter at higher figures than now obtainable and have been re-let at a loss. The present engaged list foots up about 30 vessels, showing a carrying capacity of about 80,000 tons. The disengaged ships in port are good for 60,000 tons more, and the vessels headed this way represent a carrying capacity of 370,000 tons, making a total of over 500,000 tons.

California Milling.....	1 17 1/4 @ 21 1/4
Cal. No. 1 shipping, alongside.....	1 12 1/4 @ 15
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 07 1/4 @ 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	68 1/4 @ 68 3/4	68 1/4 @ 68 3/4
Freight rates.....	37 1/4 @ 40	25 @ 27 1/4
Local market.....	95 @ 98 1/4	1 12 1/4 @ 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.11 @ \$1.13 1/4.
May, 1903, delivery, \$1.14 1/4 @ \$1.16.

Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13 1/4 @ \$1.13 1/4; May, 1903, \$1.15 1/4 @ —.

FLOUR.

There have been no changes made in official card rates for many months. Much of the flour now on market is selling at lower rates than are warranted by present cost of wheat, due to cutting competition between the local combine and outside mills. Business is of fair proportions, with stocks ample for existing requirements. Heavy shipments are being made to Asia and South America.

Superfine, lower grades.....	\$2 40 @ 25 50
Superfine, good to choice.....	2 60 @ 29 90
Country grades, extras.....	3 15 @ 35 55

Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

Demand has been good for desirable export grades, and market for barley of this description has ruled moderately firm at values current, which remain quotably about the same as stated in last review. Two part cargoes, aggregating 5700 tons, were cleared the past week, one for Belgium and the other for the United Kingdom, the clearance value of the shipments being \$112,000. Exports of this cereal for current season to date aggregate from San Francisco over 17,000 tons, being nearly as heavy as of wheat. At corresponding date last year barley shipments footed up only 2600 tons; two years ago, however, 20,000 tons of barley had been sent outward in the first six weeks of the season. Feed descriptions are going at much the same figures as last quoted, but for stock which will not grade No. 1 or better, the market is not particularly firm.

Feed, No. 1 to choice.....	91 1/4 @ 93 1/4
Feed, fair to good.....	87 1/4 @ 90
Brewing, No. 1 to choice new.....	95 @ 97 1/4
Brewing, old.....	1 00 @ 1 02 1/4
Chevalier, No. 1 to choice.....	— @ —
Chevalier, poor to fair.....	— @ —

OATS.

The market cannot be termed inactive, but offerings are liberal, and there continues to be an easy tone, especially for other than choice to select qualities. Most of the oats now being crowded to sale are of rather common quality. In not a few instances holders of high grade oats are unwilling to unload at prices now obtainable.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 30 @ 1 22 1/4
White, poor to fair.....	1 07 1/4 @ 1 15
Gray, common to choice.....	1 10 @ 1 17 1/4
Milling.....	1 25 @ 1 30
Surprise, good to choice.....	1 17 1/4 @ 1 25
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 12 1/4

CORN.

The movement continues slow, present high prices restricting the demand to quite small proportions. Stocks are largely in few hands and are not being crowded to sale. Under selling pressure, current values could not be maintained. No marked increase in spot supplies is looked for in the near future.

Large White, good to choice.....	1 50 @ 1 55
Large Yellow.....	1 42 1/4 @ 1 45
Small Yellow.....	1 45 @ 1 47 1/4

RYE.

Values are ruling steady, with arrivals light. The demand on local account, however, is not brisk.

Good to choice.....	85 @ 90
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BUCKWHEAT.

Market remains dull. In the absence of both offerings and demand, values for the present are poorly defined.

Good to choice.....	1 55 @ 1 70
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BEANS.

The market as a whole is rather firm, although most of the dealers would prefer having a weak feeling at present, as the new season is near at hand and it is the exception where local handlers are now carrying stocks of noteworthy dimensions. Holdings are largely white beans and these are principally in the hands of one or two speculative operators who bought at prices which would hardly warrant them in unloading at best figures now quotable. Bayos and Pinks have been lately in fair request, the latter commanding improved prices. Limas are in light supply and market inclines against buyers.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 65 @ 2 75
Lady Washington.....	2 55 @ 2 65
Pinks.....	2 25 @ 2 35
Bayos, good to choice.....	3 00 @ 3 15
Reds.....	2 25 @ 2 50
Red Kidney.....	2 90 @ 3 25
Limas, good to choice.....	3 35 @ 3 95
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

The market shows the same general condition as previously noted, being exceedingly quiet, with practically no domestic Niles offering. There are fair supplies of Green Dried, both in the hands of millers and dealers, but virtually nothing doing in them in a wholesale way at this date.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

The local market continues quiet, in consequence of very limited offerings. Demand is not lacking for good to choice wools, and there is no difficulty in placing stocks of this sort at fully as good figures as have been current here for some months past. Fall clip has not yet arrived

in sufficient quantity to admit of any wholesale trading. Some huying of Fall fleeces is reported in the San Joaquin section at 8 @ 10c., and a few transfers of Fall have been effected in Sonoma county at 12c.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 15
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

San Joaquin, Lambs.....	8 @ 10
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HOPS.

Market is still being quoted at tolerably stiff figures, the range being 20 @ 24c, but there is nothing of consequence doing in either old or new hops. Of last year's hops there are few remaining, and these are principally in the hands of dealers. It is estimated that the Pacific Coast crop will aggregate fully 180,000 bales, as against 150,000 hales last year. A New York review has the following regarding the condition of the market and the prospects of the Eastern and foreign crop: "The market continues to present a very quiet appearance, dealers pursuing a waiting policy. Brewers are showing scarcely any interest, all complaining of slow trade owing to continued unfavorable weather conditions. There is nothing in the situation to warrant any change in quotations, though holders are firm in their views for remaining stock of 1901 growth. Weather conditions in this State have continued unfavorable, and hops are just reported going into blow, which is fully twelve to fourteen days late, and means a late crop. Estimates now place State crop at about 35,000 hales, against 60,000 hales last year. English advices are more encouraging, weather conditions having permitted growers getting the better of the vermin, and latest estimates place the crop at 400,000 to 450,000 cwt., though conservative dealers think chances are in favor of the lower figures. The German crop promises to be large and of excellent quality."

HAY AND STRAW.

Arrivals of hay have shown some decrease, as compared with several weeks preceding, but are still of quite liberal volume, and show a large percentage of high grade hay. Considering the recent heavy receipts, values are being quite well maintained. Tendency on lowest grades or cheap hay has been to a little more firmness, owing to the comparatively light offerings of this sort.

NEW.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	6 00 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3 bale.....	35 @ 45

MILLSTUFFS.

The market for all descriptions of mill offal has been inclining in favor of buyers, owing to considerable increase in offerings, but there is abundance of room for further declines, prices being still at comparatively high levels. Rolled Barley was quite steady. Milled Corn quiet and unchanged.

Bran, 1 ton.....	19 00 @ 20 00
Middlings.....	22 00 @ 24 00
Shorts, Oregon.....	20 00 @ 21 50
Barley, Rolled.....	19 50 @ 20 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

Little doing in this line. Present offerings of most kinds quoted herewith are too light to admit of extensive operations. Quotable values remain as last noted. Owing to the very limited trading, quotations for Mustard and Bird Seed are for the time being based principally on jobbing prices.

	Per ctt.
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 25
	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Aside from a fairly active movement in Fruit Sacks, there is no great amount of business to record in this department. Asking figures, upon which are based quotations, are virtually unchanged.

Calcutta Grain Bags, huyed June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 1/4 @ 6 1/2
San Francisco Grain Bags, 22x36, spot.....	6 1/4 @ 6 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8

Gunnies.....	13 @ 14
Bean Bags.....	4 1/4 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

The same unsettled condition previously noted on account of labor troubles has continued to be experienced in the market for Wet Salted Hides and Pelts. Dry Hides have ruled fairly steady. Tallow market remains firm, with demand good.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 55 lbs.....	10 1/4 @ —	9 @ —
Medium Steers, 48 to 55 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	6 @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	2 @ —
Dry Horse Hides, medium.....	1 50 @ —	1 75 @ —
Dry Horse Hides, small.....	1 25 @ —	1 50 @ —
Dry Colts' Hides.....	50 @ —	40 @ —
Pelts, long wool, 1/2 skin.....	80 @ —	60 @ 1 00
Pelts, medium, 1/2 skin.....	50 @ —	40 @ 75
Pelts, short wool, 1/2 skin.....	30 @ —	20 @ 40
Pelts, shearing, 1/2 skin.....	15 @ —	10 @ 30
Deer Skins, best summer.....	35 @ —	25 @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	6 @ —
Tallow, No. 2.....	4 1/4 @ —	5 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

Market is very lightly stocked and firm, but demand at the prices now generally asked is not brisk. Business doing is principally on local account, and this is apt to continue to be the case throughout the season. In consequence of trade being largely local, firmness is more pronounced on Comb than on Extracted.

Extracted, White Liquid.....	5 1/4 @ —
Extracted, Light Amber.....	5 @ —
Extracted, Amber.....	4 1/2 @ —
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESWAX.

Previously quoted values continue in force, and market is firm at current figures.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef and Mutton were in increased supply, in anticipation of an increased demand, which was realized, and current values were well maintained. Lamb was not in excessive supply and desirable offerings met with prompt custom at full figures. Veal arrived sparingly and choice sold to advantage. Tendency on Hogs was to easier figures, partly owing to some increase in arrivals and partly on account of lower markets East.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/4 @ 80; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 1/2 @ 6 3/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8 1/4
Veal, small, 1 lb.....	8 @ 9 1/4
Veal, large, 1 lb.....	7 @ 8 1/4
Lamb, spring, 1 lb.....	9 @ 9 1/4

POULTRY.

There was a decidedly better demand and a generally firmer tone to the poultry market, the large number of visitors in the city creating a fairly active inquiry from hotels and restaurants, as well as from private families. Choice young stock, medium size to full grown, was most in request and commanded best prices. For fowls which were extra heavy and in every way desirable, higher figures than were quotable were realized. Sales were made in a wholesale way up to \$8 per doz. for big fat Hens, also for large Young Roosters, such as Plymouths and Brahmas, without spurs. Market at close was less active and easier.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, Hens, 1 lb.....	14 @ 15
Turkeys, alive, Gobblers, 1 lb.....	14 @ 15
Hens, California, 1 dozen.....	4 00 @ 5 50
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	4 00 @ 5 50

Fryers.....	3 50	@4 00
Brollers, large.....	3 00	@3 50
Brollers, small to medium.....	2 25	@2 50
Ducks, old, per dozen.....	2 50	@3 00
Ducks, young, per dozen.....	3 00	@4 50
Geese, per pair.....	1 25	@1 50
Goslings, per pair.....	1 50	@1 75
Pigeons, old, per dozen.....	1 75	@—
Pigeons, young.....	1 25	@1 50

BUTTER.

Not much change has been developed the current week in the butter market. Values ruled moderately firm for most select fresh, some favorite marks selling above quotations. Most of the fresh now arriving is more or less faulty, and this sort is moving slowly, the majority of buyers taking cold storage stock in preference.

Creamery, extras, per lb.....	25	@26
Creamery, firsts.....	24	@—
Dairy, select.....	23	@24
Dairy, firsts.....	22	@—
Dairy seconds.....	18	@20
Mixed store.....	17	@18

CHEESE.

There are no heavy quantities offering of domestic product, and market showed decided firmness, especially for mild-flavored new of high grade. In a small jobbing way sales are being made about half a cent above the quotations.

California, fancy flat, new.....	11 1/2	@12
California, good to choice.....	11	@11 1/2
California, fair to good.....	—	@—
California, "Young Americas".....	11 1/2	@12 1/2

EGGS.

Receipts are on the decrease, as is to be expected at this date, and for choice to select fresh the market inclined against buyers. For ordinary fresh, showing effects of hot weather, the demand was slow, however, and the prices kept at a rather low range. Cold storage supplies are being drawn upon, and by many handlers are being given the preference over fresh stock.

California, select, large, white and fresh.....	26	@27
California, select, irregular color & size.....	22	@25
California, good to choice store.....	19	@22

VEGETABLES.

The general trend of the market for vegetables in season was favorable to the consuming and buying interest, especially for other than most select qualities. Onions were held a little firmer than preceding week, but there was no very brisk trading in them, either for shipment or on local account. Choice Peas were not plentiful and in a small way brought tolerably stiff figures. Tomatoes sold at a wide range, with inside prices ridiculously low, sales being made at auction down to 10c per large box.

Beans, Lima, per lb.....	4	@ 5
Beans, String, per lb.....	1 1/2	@ 2 1/2
Beans, Wax, per lb.....	2	@ 3
Cabbage, choice garden, per 100 lbs.....	50	@ —
Corn, Green, Alameda, per crate.....	1 00	@1 50
Corn, Green, per sack.....	50	@1 00
Cucumbers, per large box.....	30	@ 50
Egg Plant, per large box.....	40	@ 75
Garlic, per lb.....	2	@ 2 1/2
Onions, Yellow Danver, per cental.....	50	@ 65
Okra, Green, per box.....	50	@1 00
Peas, Sweet garden, per lb.....	2 1/2	@ 3
Peppers, Green Chile, per box.....	40	@ 60
Peppers, Bell, per box.....	40	@ 60
Summer Squash, Bay, per large box.....	25	@ 50
Tomatoes, River, per large box.....	25	@ 50

POTATOES.

Market for potatoes has ruled very quiet most of the time since last review. There would probably have been a fair outward movement to Texas had it not been for railroad washouts interfering with shipments in that direction. While quotable values were without radical change, the market was decidedly weak for other than most select. Sweet Potatoes arrived from Merced and brought tolerably stiff figures, commanding \$2 75@3.50 per cental in a limited way.

Burbanks, Salinas, per cental.....	75	@ 1 05
River Burbanks, good to select, per cental.....	30	@ 75
Early Rose.....	30	@ 40
Garnet Chile.....	50	@ 70
Sweet Potatoes, per cental.....	2 50	@ 3 50

The Fruit Market.

FRESH FRUITS.

A feature of the week in the fresh fruit trade was the inauguration of auction sales on the wharf by the Growers' Co-operative Agency, composed largely of Sacramento river fruit growers and handling principally Sacramento river fruit. Much antagonism has been worked up against the Growers' Agency by the fruit commission firms who previously handled the bulk of the Sacramento river fruit coming to this city. The fruit handlers have a boycott against the Growers' Agency, and the Agency has a suit for damages against the commission firms in the boycott. The first auction was held Monday and extremely low prices prevailed, Cantaloupes going at 20@25c. per crate, Nutmeg Melons at 15c. per box, No. 2 Bartlett Pears at 15@25c. per box, Peaches and Nectarines at 15c. and Plums at 10@15c. Subsequent prices at the auc-

tion sales were at much the same low levels. The PACIFIC RURAL PRESS is for the grower, first, last and all the time, and thoroughly understands the grievances with which the growers have had to contend, and which have led to the present conflict. The very low values it has been necessary to accept at these auction sales are, of course, having temporarily a depressing effect on the fresh fruit market generally, but this is a matter which will doubtless soon regulate itself, and it is probable that good will ultimately result to the entire fruit producing interest. The general market showed considerable activity, in consequence of the large number of Eastern visitors in the city, but offerings of the most seasonable kinds were liberal, and the market as a whole showed weakness, with prices at a somewhat wider range than ordinarily, this being in a certain measure attributable to great difference in the quality of offerings. Most of the quotations are necessarily based on sales made in the open market.

Apples, per fancy, 4-tier box.....	1 00	@ 1 25
Apples, good to choice, per 50-lb. box.....	60	@ 90
Apples, common to fair, per 50-lb. box.....	30	@ 50
Apricots, Royal, per crate.....	30	@ 65
Cantaloupes, per crate.....	75	@ 1 25
Crabapples, per small box.....	25	@ 50
Blackberries, per chest.....	2 0	@ 4 00
Raspberries, per chest.....	6 00	@ 9 00
Figs, 1-layer box, 65@90c; 2-layer.....	1 00	@ 1 50
Grapes, Fontainebleau, per crate.....	40	@ 60
Grapes, Muscat, per crate.....	40	@ 75
Grapes, Rose Peru, per crate.....	50	@ 75
Grapes, Seedless, per crate.....	40	@ 75
Grapes, Tokay, per crate.....	75	@ 1 00
Grapes, Zinfandel, per box.....	35	@ 50
Nectarines, Red, per box.....	50	@ 1 00
Nectarines, White, per box.....	25	@ 50
Nutmeg Melons, per crate.....	25	@ 40
Peaches, per box.....	25	@ 50
Peaches, per basket.....	15	@ 35
Peaches, Cling, in bulk, per ton.....	15 00	@20 00
Peaches, Freestone, in bulk, per ton.....	10 00	@15 00
Pears, Bartlett, No. 1, 40-lb box.....	50	@ 75
Pears, common, per box.....	25	@ 40
Pears, No. 1 Bartlett, per ton.....	15 00	@18 00
Plums, choice large, per box or crate.....	30	@ 50
Plums, per ton.....	8 00	@12 00
Plums, small, per box.....	15	@ 30
Prunes, Tragedy, per crate.....	25	@ 40
Strawberries, Longworth, per chest.....	7 00	@ 9 00
Strawberries, Melinda, per chest.....	3 00	@ 6 00
Watermelons, per doz.....	75	@ 2 00
Whortleberries, per lb.....	5	@ 7

DRIED FRUITS.

Apricots are being offered entirely too freely from first hands for a healthy market. With a heavy yield and canners packing less than usual, confining their purchases mainly to the largest and choicest, a larger proportion of the crop than ordinarily is being dried. While there is considerable movement outward and the full quota of operators in the field, handlers cannot take immediate care of the entire crop, no matter how much their desire to do so, or how tempting to them the going prices. Choice Royal Apricots were offered this week in sacks at 6 1/2c. The fruit could not well have been finer. Handlers found no fault with the quality or the price, but having already all they could conveniently take care of for the present, declined making further purchases. The quotable range may be said to be 5 1/2@7c. on Royal Apricots in sacks and 7@8 1/2c. for Moorpark, business being within range of these figures when buyers are found in need of stock. Apples are offering more freely and are lower, 7 1/2c. being now a quotable extreme for evaporated in boxes. Speculative operators are quoting 7c. for September and 6 1/2c. for October delivery. Not much has been yet done in Peaches, but buyers are talking 4 1/2@4 3/4c. on standard to choice for late August delivery. On new crop Pears, Plums and Nectarines, values have not yet been clearly determined. October deliveries of choice Pears are quoted at 7c. The Prune market is not giving evidence of much life at present, buyers and sellers being in most instances still too far apart in their views for much business to be transacted. Recent transfers have been mainly in Prunes from "outside" districts on the 2 1/2c. basis, 1/2c. premium for large sizes. The minimum asking figure for Santa Claras is 2 1/2c. for the four sizes, 1/2c. premium for large.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	7	@ 7 1/2
Apricots, Royal, good to choice, per lb.....	5	@ 6
Apricots, Royal, fancy.....	7	@ 7 1/2
Nectarines, per lb.....	—	@—
Peaches, unpeeled, choice.....	4 1/2	@ 5 1/2
Peaches, peeled, in boxes.....	—	@—
Plums, Red and Black, pitted.....	5	@ 6
Plums, White and Yellow.....	5	@ 6

COMMON SUN-DRIED.

Apples, sliced.....	4	@ 5
Apples, quartered.....	—	@—
Peaches, unpeeled.....	—	@—
Pears, prime halves.....	—	@—
Plums, unpitted, per lb.....	1 1/2	@ 2 1/2

RAISINS.

Stocks now in hand are of small volume and are mostly loose Muscatels, for which the market is firm at quotably unchanged values, 5 1/2c, 5 3/4c and 6c for 2, 3 and 4-crown. In new Raisins for future delivery

there is nothing at present doing, pending efforts to effect a combination of growers and packers. In Spain heavy damage is reported to the raisin crop from extremely hot weather.

CITRUS FRUITS.

There has been a very fair demand for both Lemons and Limes, but there was no scarcity of supplies of either kind, and values remained virtually as last noted.

Lemons—California, select, per box.....	3 00	@—
California, good to choice.....	1 75	@2 75
California, common to fair.....	1 00	@1 50
Limes—Mexican, per box.....	4 00	@4 50

NUTS.

The Almond market is booming, on account of failure in European crop, and a corner is said to be in process of formation on the California output. A large portion of the crop in this State is reported already secured by several dealers, with sales up to 12c for leading Hatch varieties. The Davisville and Brentwood growers sold their poolings last Saturday to a San Francisco firm at good prices, and much better than had been previously bid. As to Walnuts, there have been no new developments. Peanuts are in quite moderate supply and values are ruling steady.

California Almonds, shelled.....	16	@20
California Almonds, paper shell, per lb.....	11	@12
California Almonds, soft shell.....	8	@10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	11	@12
Cal. White Walnuts, No. 2 soft shell.....	9	@10
Cal. White Walnuts, No. 1 hard shell.....	9	@10
Cal. White Walnuts, No. 2 hard shell.....	7	@ 8
Peanuts, California, fair to prime.....	4 1/2	@ 5 1/2
Peanuts, Eastern, hand-picked.....	6	@ 6 1/2

WINE.

The wholesale wine market is very quiet, with offerings light from first hands and little disposition shown on the part of either buyers or sellers to crowd business. Quotable values for dry wines of last vintage remain nominally at 20@25c per gallon, although it would have to be an exceptionally choice article for which extreme price above noted could be readily realized in a regular way. The quotable range on grapes may be said to be \$20@25 per ton for good to select Northern grapes for dry wines, and \$12@16 per ton for San Joaquin and Sacramento sweet wine stock. There is a fair movement outward, mostly of blended wines. Last Saturday's Panama steamer carried 79,725 gallons and 30 cases, mostly for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	123,016	621,601
Wheat, centals.....	48,055	461,206
Barley, centals.....	180,365	539,728
Oats, centals.....	15,839	64,993
Corn, centals.....	810	6,796
Rye, centals.....	4	39,604
Beans, sacks.....	5,923	18,730
Potatoes, sacks.....	18,937	121,734
Onions, sacks.....	4,903	22,144
Hay, tons.....	4,812	25,005
Wool, bales.....	1,105	7,102
Hops, bales.....	18	31

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	97,492	382,412
Wheat, centals.....	19,654	348,390
Barley, centals.....	172,390	281,519
Oats, centals.....	940	5,702
Corn, centals.....	1,075	4,634
Beans, sacks.....	611	2,060
Hay, bales.....	250	13,176
Wool, pounds.....	—	85,157
Hops, pounds.....	612	2,670
Honey, cases.....	3	56
Potatoes, pack's.....	2,349	7,643

California Dried Fruit at New York.

NEW YORK, Aug. 13.—Evaporated apples, common, 8@10c; prime wire tray, 10 1/2@10 3/4c; choice, 11@11 1/4c; fancy, 11 1/2@12c.



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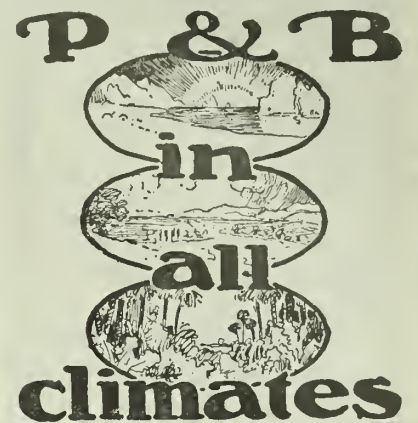
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California Dried Fruits.—Spot supplies are light, the demand is fair, and current values are being well maintained.
Prunes, 3 1/2@6 1/2c.
Apricots, boxed, 8@10 1/2c; bags, 7 1/2@9c.
Peaches, unpeeled, 8 1/2@10 1/2c; peeled, 12@16c.



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FRUIT MARKETING.

European Prune Products and Markets.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

HUNGARY.—The present prospects in Bosnia and Serbia are for a good middle crop of prunes. In case no unforeseen events take place, the crop will exceed that of last year, which was weak in those countries. But it is impossible to give figures at the present moment. There are no left-over stocks of last year's crop of Bosnian and Serbian prunes. Last year's crop of Serbian and Bosnian prunes was over 100,000,000 pounds.

The present selling prices of new prunes for autumn delivery are as follows: For 1902 Bosnian prunes in lots of 110-120, 95-100, 80-85, per hundred meter-centners (22,046 pounds), in sacks for delivery in October, 1902, average price \$2.75 upwards per 110.23 pounds at the Bosnian station on the Save.

For 1902 Serbian prunes in lots of 110-120, 95-100, 80-85, per hundred meter-centners (22,046 pounds), in sacks for delivery in October, 1902, average price from say \$2.60 upwards per 50 kilograms (110.23 pounds) net cash at the Serbian station on the Save.

The real regulation of prices, however, will come in August, when the extent of the crops of the producing countries can be clearly seen and in particular when Hungary's crops are secured. **FRANK DYER CHESTER,** U. S. Consul.

FRANCE.—In accordance with instructions from the State Department to report on the prune crop of southwest France at this date, I have the honor to state as follows:

There is no modification of conditions as given in my June report. The prune crop of this region will be practically a negligible quantity in the prune market of 1902. There will not be enough to supply the home demand, let alone any for export. **ALBION W. TOURGEE,** U. S. Consul.

Bordeaux, France, July 15, 1902.

European Walnuts and Lemons.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

HUNGARY.—The May frosts have spoiled the walnut crop to a great extent, so that in the chief growing districts hardly a fourth of last year's crop is to be expected. The 1901 product has been almost entirely consumed, and so no large amount can be obtained before some months, say the middle of October. Sales are made against cash payment, the walnuts are collected at certain centers, are manipulated and are again sold for cash. No offers will be made before October, when the result of this year's crop will be known. Prices differ from year to year from 15 to 20 crowns (say \$3 to \$4).

As reported last year, Hungary's export has never been so small and the import so large as in the year 1900. Roumania's crop is more important.

FRANK DYER CHESTER, U. S. Consul.

Budapest, Hungary, June 25, 1902.

ITALY.—The heavy rains of the spring have caused most of the lemons to grow to a large size, and as large lemons are not desired in America most of them will be consumed in Europe. Shipments to America will therefore probably be below that of last year. The crop is estimated to be about one-third shorter than usual. It will probably be about 50,000 boxes, but only a part of this will be sent to the United States. The rate of freight to New York is 1 shilling per box or 1 shilling 3 pence by the fastest steamers.

WALNUTS.—Coldness of the weather, and heavy rains during the blossoming of the trees caused much of the flower to fall before maturity, and, as a consequence, the crop is expected to be very short; not more than half an average crop. **C. S. CROWNSHIELD,** U. S. Commercial Agent.

Castellammare di Stabia, Italy.

European Almond Crops and Prices.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

SPAIN.—What are shipped from here are known as "Alicante almonds," always without shells, and picked in different sizes or qualities, such as "fine," "medium," "superior," and "ordinary," and are generally shipped in boxes containing twenty-eight pounds each; some in barrels containing 3 cwt. each and a few in bags containing 2½ cwt. each. They generally ripen about or during the month of July, and are brought to market, in kernels or without the shell, during the latter half of the month of August and some small shipments are made about the end of August.

The coming crop promises poorly. It will be a short one, say somewhat shorter than the past one, which was also a short one, and of which no stocks are now remaining in this district. It is thought prices will rule higher than during the past season, and the quality will be good.

There are no direct sailings from this port, consequently freights are very high, say a through freight of 60 shillings (\$14.70) per ton of 20 cwt. net via Liverpool and 50 shillings (\$12.25) per ton of 20 cwt. net via Amsterdam for New York or Boston.

During the past season about 283 tons of almonds have been exported to the United States from this port, viz.: 14,195 boxes, 592 barrels and 138 bags, making up a total value of \$107,002.61 U. S. gold coin. **E. C. CAREY,** Acting Vice-Consul.

Alicante, Spain, July 10, 1902.

ITALY.—The varieties grown in the consular district and shipped to the United States are known in the trade as Paterno - Aderno, Biancavilla, Palma - Girgenti, Catania, Mascali, Amare, Selected Avola. In reference to describing the nature of the shells, I find that there are no unshelled almonds in the Catania market, and not to delay this report I have concluded that the better plan would be to send samples of the different varieties to the Pacific Commercial Museum. I have written to the different localities in the interior for samples and on arrival of same will forward them direct to San Francisco.

All shipments to the United States are shelled. Almonds ripen during August and shipments usually commence about September 10th. In some localities the whole crop has been destroyed by frost, in others there will be about the usual yield. The crop this year will be about one-half that of last year and about one-third less than the average yield. The crop in this district is estimated at 35,000 bags or 7,716,100 pounds; present prices as follows, shelled:

	Per 100 kilos.	Dollars per 220.46 lbs.
Paterno-Aderno	207 00	\$39 95
Palma-Girgenti	205 00	39 56
Biancavilla	205 00	39 56
Catania	210 00	40 53
Mascali	211 00	40 72
Amare	209 00	40 33
Avola, selected	244 00	47 09

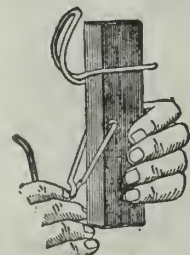
Present freight rates to New York, \$4.86 to \$5.37 per ton.

ALEXANDER WEINGARTER, U. S. Consul.

Catania, July 9, 1902.

Change of water is the great peril of vacation time. Pure water is scarce, hence disturbances, always serious, of the stomach and bowels. Perry Davis' Painkiller has never failed. Can't fail in your case!

THE PROP THAT SAVES THE CROP



They are to the wooden fruit prop what the clothespin is to the clothesline. They grasp the prop by the prong points and form a crutch that holds the limb firmly but as gently as if held by hand.

Be sure you get **Woodward's** adjustable prop bracket. The only one that adjusts itself to any prop or cottonwood pole. Cost 2c each and never wears out. Ask your hardware dealer.

J. K. Woodward & Co., 860 Vine-st. Riverside, Cal.

Sharples "Tubular" Dairy Separators.

Greatest Step Ever Made in Advanced Cream Separator Construction.

If cost more, are worth double, for they produce enough more butter than the best competing separator to pay fully 6 per cent interest on whole first cost of machine.

We Absolutely Warrant It and Give Free Trial to Prove It.

Also very light running, a 600 lb. machine turning easier than other 300 lb. machines. No disks to bother with and get out of order. No complications.

If you want to know about all different separators, send us for a copy of "The Separator," containing an expert opinion on them, together with free Catalog No. 131.

Sharples Co., Chicago, Ill. **P. M. Sharples,** West Chester, Pa.

CALIFORNIA'S LARGEST NURSERY

"When ye hae nae'thing else to do stick in a tree. It will be growing when ye're sleeping."

We are the originators and growers of the famous

Calimyrna Fig

trees, and agents for the world renowned F. Richter, (Montpellier, France,)

RESISTANT Grape Cuttings

We are also large growers of resistants. Orders taken at any time. Correspondence solicited. 800 acres of nurseries.

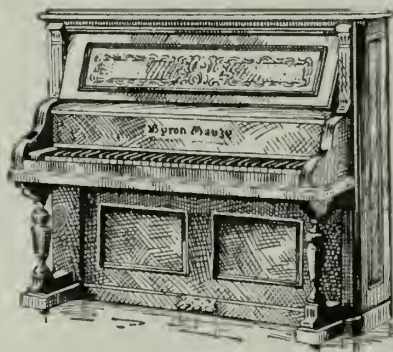
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Byron Mauzy
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Spielmann } **PIANOS.**

PIPE ORGANS.

Byron Mauzy,

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Portable Houses.

No. 47 has two inside doors and one outside. Three rooms and three windows. Weight 4800 pounds packed for shipment.

A Very Convenient and Inexpensive House.

Send for Illustrated Circular and Price List.

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DEEP WELL

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SHIP and STEAMBOAT WORK.

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Citrus Trees

that grow and are true to name.

These nurseries are headquarters for Citrus Trees.

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WE WANT YOUR TRADE.

Remember! This valuable book is FREE. Send for it to-day.

R. M. TEAGUE, (Estab. 1890.)
San Dimas, Los Angeles Co., Cal.

MAZZARD CHERRY SEED.

NEW CROP NOW READY. GOOD QUALITY. SEND FOR SAMPLES AND PRICES.

Later we shall offer Seeds of APPLE, CRAB, MYROBOLAN PLUM, MAHALEB CHERRY and PEAR. Also full line of FRUIT STOCKS. Write for prices.

RAFFIA. Best quality, long strands, good color and strength. We are headquarters.

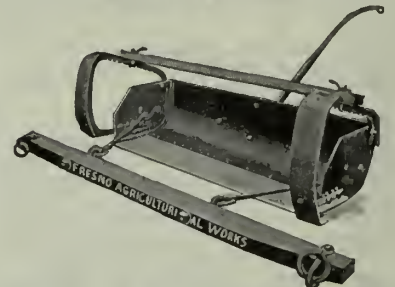
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The Fresno Scraper.

3½-4-5 Foot.



FRESNO AGRICULTURAL WORKS,
FRESNO, CALIFORNIA.

1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

FOR SALE. 80 Acres All Rich Valley Land.

Good house of seven rooms and bath, and other buildings. Located one mile from St. Helena, Napa Co., near school and R. R. station. Price reasonable. Address H. J. LEWELLING, St. Helena, Cal.

BIG MONEY In Dairying in Fresno County CALIFORNIA

4,000 acres alfalfa for lease on shares. Rental only one-third of the butter fat produced. Tenant retains two-thirds butter fat and all calves and all hogs. Alfalfa the king of dairy foods. Butter at half its cost in Eastern States. No housing and feeding stock. Pasturage every day in the year. Don't buy land. Buy cows and rent alfalfa. Far greater profit thus to dairymen. Skimming station of the San Joaquin Ice and Creamery Co. on the property.

Feed for Cattle by the Month

Write for particulars to
KEARNEY VINEYARD SYNDICATE
Kearney Park, Fresno, Cal.

GLENN RANCH, Glenn County, :::: California. FOR SALE In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

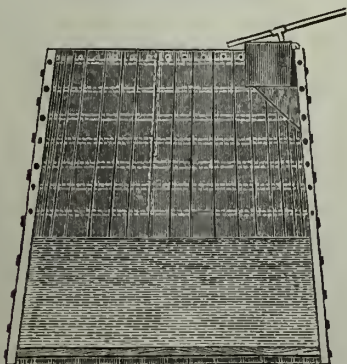
The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

THE R. F. WILSON MFG. WORKS,
STOCKTON, CAL.

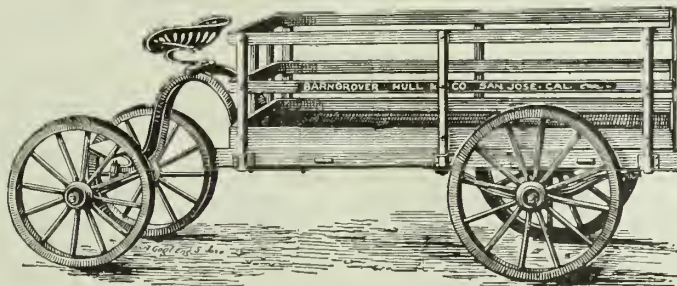


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Oil Tanks. Water Tanks. All Kinds of Tanks. Get my delivered price to any part of the State. I can save you from 10% to 20%. A 2-cent stamp will prove this to be true. Write to-day.

R. F. WILSON, Prop., Stockton, Cal.

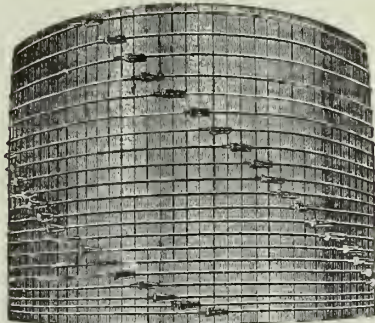
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Sept. 8th to 20th
RACES YOU WILL ENJOY.
Poultry Show.
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CATTLE AND HORSE SHOW.
FANCY SWINE & SHEEP.
Industrial Pavilion Displays
Music, Entertainment & Instruction.
Excursion Rates for Visitors.
EXHIBITS CARRIED FREE.
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Anderson-Barngrover Co., Largest Manufacturers on the Pacific Coast of

COMBINATION PRUNE MACHINES (DIPPER, PERFORATOR AND GRADER.)
AUTOMATIC PRUNE DIPPERS FOR LARGE ORCHARDS.
UP-TO-DATE TRUCKS, WAGONS, FIELD CARS, ETC. PACKING HOUSE AND CANNERY SUPPLIES.
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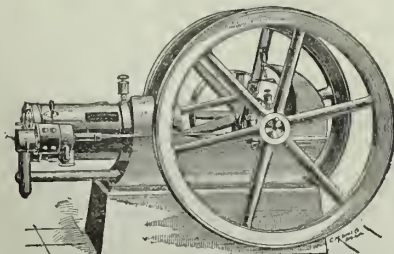
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Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channels or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

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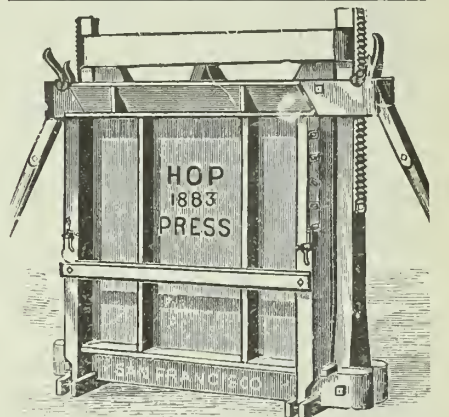
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We would like to send you sample of our W. & P. Roofing, and to tell you its advantages over all others.

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Thirty-five bushels of wheat contain thirty pounds of
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Our books contain many valuable facts and suggestions for farmers. The books are free; send name and address to
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2nd-Hand California Hop Press. \$65.00. NEARLY NEW.

Made by Jacob Price of San Leandro
Box 6 feet deep, 5 feet long and 2 feet wide, making bale 24 inches. New press costs \$150.00.
Address I. J. TRUMAN & CO., Call Bldg., San Francisco.

JUNIOR MONARCH HAY PRESSES.



Standard and 3/4 Bale Sizes.

Manufactured and for Sale by
L. C. MOREHOUSE.
WM. H. GRAY, Agent, San Leandro, Cal.

THE "BOSS" TREE PROTECTOR.



Made of Yucca Palm.

Is cheap, durable, and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

Send for samples.

PRICES:

12 inches long,	\$ 9.00 per 1000.
14 " "	10.00 " "
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Everywhere.

YUCCA MANUFACTURING CO.,
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ALMOND HULLERS

—For Sale by—
A. O. RIX, Irvington, Alameda County, Cal.

ON THE ROAD.

In the Hub of the San Joaquin.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

THE STATE'S CENTER.—The center of the geographical area of California east and west, and north and south, also, is marked by a granite surveyor's monument, which stands less than a mile from the business center of Fresno to the west, on a slight rise of ground.

EFFECTS OF IRRIGATION.—When the work of turning Fresno county's production from the products of a desert to those of civilization first began, men had to go from 50 to 150 feet into the earth to find water outside the streams. Now, well digging shows that the general average depth to water is 8 feet, in some places less, and the greatest anxiety is to find means to get rid of the water.

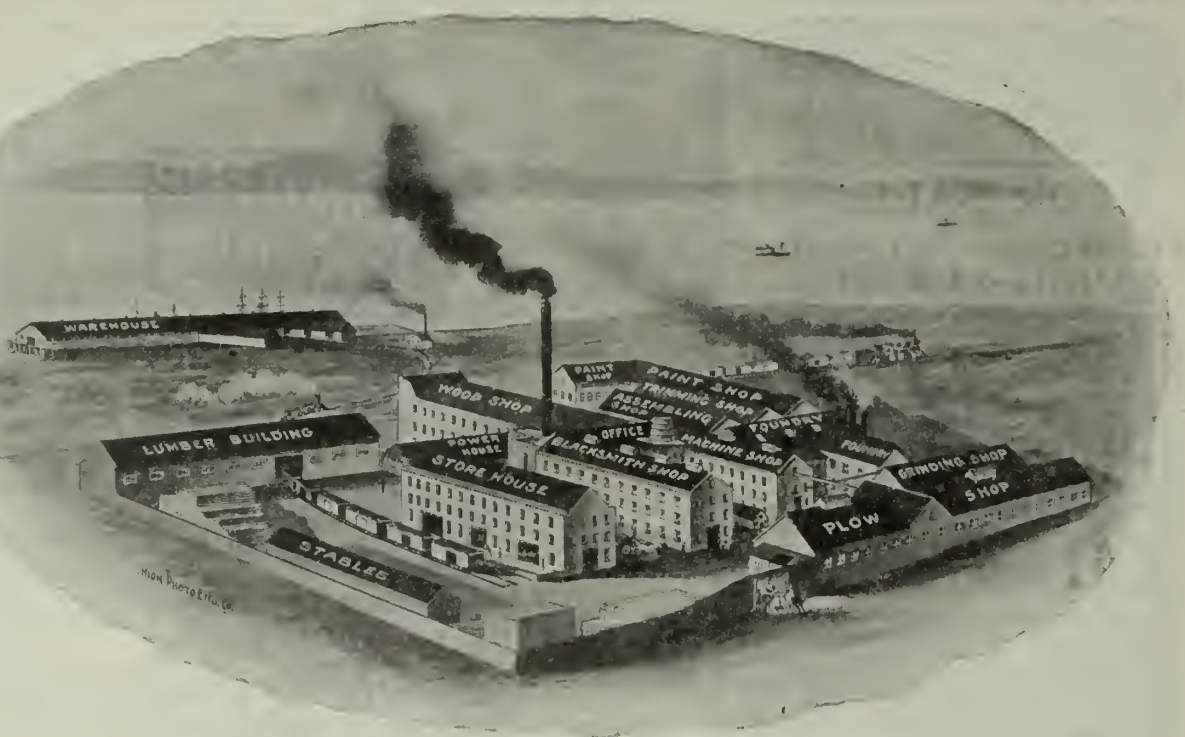
ABOUT HUMIDITY.—Men may produce barometrical records, gained at what height from the earth we do not know, as much as they like, but the man who happens to have a wheat-straw hat to wear, and who travels in the Sacramento and San Joaquin valleys in mid-summer, can see by the difference of condition of the straw in his hat in different places and in varying conditions that there is a difference in the humidity of the air even in the irrigated and non-irrigated sections of the same county, and a particularly noticeable difference between the grain-growing regions of the western side of the Sacramento valley and the alfalfa, vineyard and orchard fruit, and corn-raising region around Hanford. Tulare lake undoubtedly has a modifying influence.

THE FRESNO PACKERS.—The Eisen-Veith and Earl fruit companies are the only shippers of green fruit out of Fresno this year. The former is a f. o. b. buyer. They expect to ship a total of 150 cars this season. They will probably not ship as many Bartlett pears this year as the production warrants, since the owners of orchards—many of them Chinese and Armenians, to whom the orchards were sold recently, largely last year—figuring from the basis of the destruction done by the pear blight locally, thought to get from \$40 to \$60 a ton for their pears; but the company refused to pay more than \$20, so they report. Now owners of orchards are eager to sell at much less figures, but find no demand where they expected to.

The principal points where the company is packing green this season are Fresno, Sanger and Las Palmas. In Fresno they have given up the warehouse they had, but are looking for one in its place, and they have leased the drier, distillery and packing house of the Fresno Tartar Works at Malter-moro.

Noble Bros., of the Eagle Packing Co., are putting several thousand dollars' worth of repairs and improvements on their packing house.

The Fresno Home Packing Co. is using an Olds automobile this season for fruit-buying work. Their record with the machine during the apricot season was 2000 miles, without a mishap, at a cost of \$20, only \$10 of which was for actual running expenses, the other half being for care by the selling agents. This is but 1 cent per mile for all expenses. The record showed 60, 56, 72, 81, 54 miles for each of five days during the week of heaviest travel. Two teams, making less mileage each, cost them \$65. As a consequence of this comparative showing, they intend to put on two more machines. It is understood in Fresno that the J. K. Armsby Co. used an auto at San Jose for buying. The Fresno Home packing house is an illustration of the application of correct principles in the organization of a business. The manager of the packing house, T. W. Pond, grew up in the business, and so understands it. Only results are required of him, and all details of method and work in producing them are left to him. He has the ability to put each employee where he or she fits in the work, so that the whole human machinery runs most smoothly



Benicia Agricultural Works.

We present in this issue illustration of the Benicia Agricultural Works, the largest institution of its kind in the West, and one of the largest in the United States.

This factory is located at Benicia, Cal., only a few hours distant from San Francisco, and is particularly fortunate in having excellent railway and water shipping facilities.

Not only do these works turn out plows, vehicles and other agricultural implements, but in addition cater to a

large line of jobbing customers for work in wood and metal lines.

The plant, as shown in the illustration, has a diversified equipment, including, in addition to the building shown in the illustration, a large size bolt making plant, which is a late addition to their former equipment.

and effectively with the least superintendence. All of which is the best evidence that the manager is well fitted for his place, leaving those higher in the business free to make that reputation for general managerial ability in fruit handling which it is locally recognized they are making.

In the brands this correctness of organization is also manifest. The brands are ribbons only: blue, on a white background; white, on a blue ground; green, on a yellow ground; yellow, on a green ground; purple, on a gold ground. Each stands for a certain grade—the same grade in all fruits. In all respects this scheme of brands meets the requirements of the laws of art: unity and diversity in combination; contrast, simplicity, easy to perceive and to remember, setting forth a definite idea. Some \$1100 worth of change and enlargement were made in the packing house this year.

Some internal changes have been made in the Seropian packing house, under the excellent mechanical management of C. W. Chittenden, who was on the outside for the firm last year, but will have charge of the house this year.

A five-room sulphur house, on the same plan as that of the Fowler house, has been added to the Fresno house of Chaddock & Co.

A new 80-ton A. B. grader, 60-ton stemmer, ten-room bleacher and a new processing shed have been added to the facilities of Castle Bros.' house this year and the grader moved upstairs. The firm is putting out some fine well-graded fruit in the apricot line; J. J. Hoey has charge.

No green fruit was put out at Fresno by the Porter Bros. Co. this year. A new grader somewhat increases the dried fruit capacity; John Mattingly succeeds as manager.

Griffin & Skelly's packing house has a new ten-room sulphur house, with plastered rooms and individual brick flues for "fires." F. M. Romaine has the management of the house, which includes a cannery in active operation.

The Association cannery is doing a large amount of work with improved facilities.

The A. L. Hobbs Co. engine has been moved out of the house into a new brick house of its own, and a new process room, bleacher and grader have been added to the packing house.

The Earl Fruit Co. house is busy as usual on green fruits.

To the packing house of the Pacific Coast Seeded Raisin Co., near by, has been added a \$15,000 fire department,

consisting of an arrangement of water pipes discharging automatically upon the melting of a plug at a certain degree of heat. A. H. Mowat is manager and John Luce superintendent, succeeding R. D. Robinson.

The Phoenix Raisin Seeding & Packing Co. engine has been moved into a house of its own, and a new bleacher put in.

The Producers' Packing Co. packed about sixty cars of raisins last year and will strive to pack seventy-five this year. Other packing houses in this line will be mentioned later.

The Olympian Packing Co., composed of very intelligent Armenian residents, has rented its packing house for this year to Guggenlime & Co., but will maintain its organization with a view to being in business next year.

Markarian Bros. packed fifty-five carloads of figs last year and expect to do even better this season. They report between 60% and 65% of the trees in their new 450-acre fig orchard, planted last year, as active and coming on well.

The J. B. Inderrieden Co.'s new brick packing house on the Santa Fe reservation is creditable to the town and company. It is 112x120 feet, basement and two stories, of brick. The basement is double-floored and tile-drained underneath. There is a separate foundation in it for the grader. The basement also contains the dried fruit processing machinery and storage bins. The fig packing is also done in it. It, as well as all the rest of the building, is lighted by electricity. An elevator runs from the basement to the top floor. The second floor is used for receiving fruit, packing loose and seeded raisins, and as a general operating room. Over head are runways for boxes, which are made on the top floor, and for seeds and stems. On the top floor are the type printing and box printing, box making (including power saw and planer), box nailing (including three Hayes nailers) machinery, and the raisin seeding department. The office is finished in cement overhead as well as on sides, above tall wainscoting in natural wood oiled. A false ceiling gives it an overhead air chamber, and helps to make it one of the coolest of offices. A regular telephone system connects all departments in the house with the office; and 150 feet of 2½-inch hose, well placed on each floor and connected with a large stand pipe supplied by the city, helps to make the house comparatively safe from fire. The power to drive the machinery is

supplied by two 70 H. P. boilers and a 100 H. P. engine, the fuel being crude oil stored in a steel tank holding 6400 gallons and a brick one holding 10,700 gallons, both buried in the ground outside between the engine house and the railroad track. A 150-light Edison dynamo supplies the electricity for lighting, telephone, etc. There is a separate exhaust steam heater for heating water for the boilers. All the power machinery is in a separate brick engine house. The platform facilities enable the loading of four cars at a time. All in all it is a notably complete and compact house, the "organization" of which belongs to the credit of W. F. Forsey, the local manager.

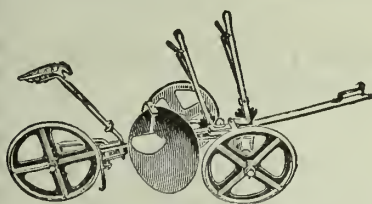
The new firms in business this year at Fresno are the Droge Fruit Co., composed of P. Droge and H. Droge, brothers, the former for twelve years and the latter for seven years in the employ of Seropian Bros. and Guggenlime & Co. The Droge Co. are well spoken of by the trade generally. They will pack only figs this year. Their buyer will be Sam Zetz, who has been with Seropian Bros. and the J. B. Inderrieden Co., principally the former. The Droge Co. has a new house on the Southern Pacific reservation, 100x100 feet floor, brick foundation and basement, otherwise corrugated iron, working basement and separate brick engine house. The packing machinery seems to be so arranged as to secure unusual economy in labor.

Guggenlime & Co. operated some at Parlier last year. This year, at Fresno, in addition to renting the Olympian packing house on the S. P. reservation, they are having a fine brick one built for them on the Santa Fe at the south end of the reservation. It will be 176x86 feet, one and one-half story and basement, the basement of cement, to be 80x86, with brick foundation and wooden superstructure, with fire wall between it and Seropian Bros.' house. It is expected that the new house will be done Sept. 25. In addition to dried fruits, figs and raisins, they will handle honey, making a specialty of beeswax. W. F. Toomey, formerly assistant to Manager Lynch of the Porter Bros. Co., is the local manager, with several buyers. Both packing houses will be used this season.

TWO TENDENCIES.—There are two tendencies in California quite observable to one who has traveled all over its valley portions: One is toward alfalfa raising and consequently dairying and stock raising, which brings about greater diversification of industry in

communities as well as on individual farms; and the other is, on the part of promoters in new sections opening up to settlement, to tell the plain truth about them in a way to interest plain people who want to make homes. In consequence, particularly in the San Joaquin valley, from Modesto to Bakersfield and even to Stockton and beyond to Sacramento, it is becoming a home-making State. The spirit of the State is slowly, but surely changing from gold finding to home finding, yet it is true that there never was a time in the history of the State when gold finding was so promotive of agriculture and all the arts of home and peace as now, but it has ceased to be the dominant tone of the State and has become a sub-dominant one giving power to progress.

A dangerous drink is impure water. It brings on diarrhoea, cramps and piercing pain in the bowels. Counteract the effect of bad water with Perry Davis' Painkiller. Take it in your grip when you travel.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

A Good Testimonial.

Midland Poultry Food Co., Kansas City, Mo.
Gentlemen:—On Feb. 10, 1902, I took off a hatch of thoroughbred Barred Plymouth Rock chicks, and purchased some Midland Poultry Food from the "Petaluma" Incubator Co. on which to feed them. You will probably be pleased to note that on July 1 the first pullet commenced to lay and so far has laid two eggs. These pullets have had nothing but the Midland Poultry Food and a little grain since they were hatched.

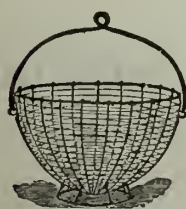
This, I think, speaks very highly for the Midland Poultry Food, as never in the history of my hatching have I had Barred Plymouth Rock pullets commence laying so early. As you will see, they are a little over 4½ months old, not being 5 months old until the 10th of this month.

Midland Food is, without doubt, an excellent article, and I assure you that I will not be without it on my poultry ranch, and will recommend it to all poultry men who are desirous of having their fowls develop and mature early. I have also raised a larger percentage of chicks with this Food than ever before.

Wishing you the greatest of success with your Food, I remain, Respectfully,
H. R. CAMPBELL.
Petaluma, Cal., July 3, 1902.

Choose Wisely.

From among the remedies offered for diseases of the horse, it would be difficult for the novice to make a choice. One can safely depend, however, on anything that has been sold and used for many years. There is one such that stands out prominently, Kendall's Spavin Cure, manufactured by the Dr. B. J. Kendall Co. of Enosburg Falls, Vt. This preparation has had a long and successful career. Beginning in a small way in the State where it is manufactured, its merits have commended themselves to intelligent horse owners and have given it a footing in all parts of the world where horses are used and appreciated. The Dr. Kendall Co. publish a book entitled "A Treatise on the Horse and His Diseases," a valuable compendium of horse information, well illustrated, concisely written, and containing useful and independent discussion of almost every disease to which the horse is subject. It can be procured for the writing to the publisher. The book commends itself to anyone who wants reliable information in brief form. Write the Dr. B. J. Kendall Co. at Enosburg Falls, Vt., for a copy of their book on "The Horse and His Diseases," sent free.



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GRADERS, ETC.
West Coast Wire & Iron Works
17-19 Fremont Street,
San Francisco, Cal.

Wagon World-Awheel.



Half a million of these steel wheels have been sent out on our own wagons and to fit other wagons. It is the wheel that determines the life of any wagon, and this is the longest lived wheel made. Do you want a low down Handy Wagon to use about the place? We will fit out your old wagon with Electric Wheels of any size and any shape tire, straight or staggered spokes. No cracked hubs, no loose spokes, no rotten felloes, no resetting. Write for the big new catalogue. It is free.
Electric Wheel Co., Box 10, Quincy, Ills.

Breeders' Directory.

HORSES AND CATTLE.

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JERSEYS—First-class regist'd hulls for sale. Inquire C. L. Taylor, 218 Sansome St., San Francisco.

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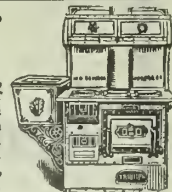
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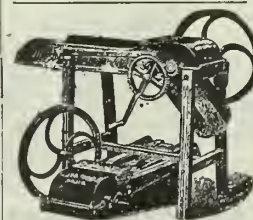
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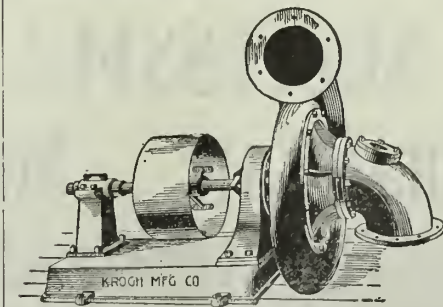
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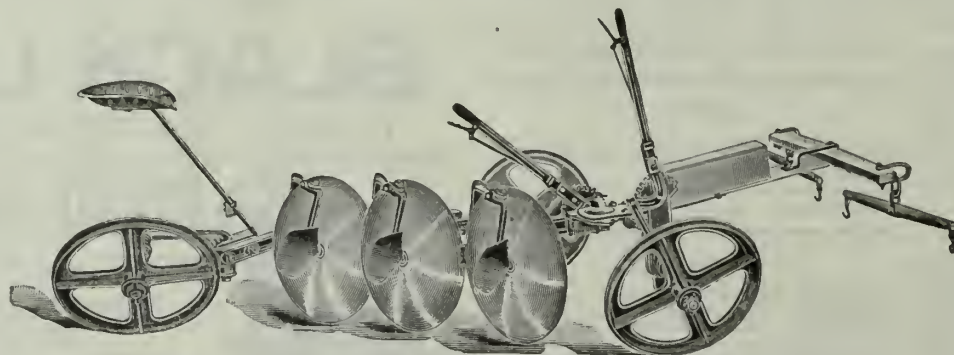
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 8.

SAN FRANCISCO, SATURDAY, AUGUST 23, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Profitable Orchards Near Paso Robles.

Considerable criticism has recently been passed upon a bulletin issued by the University describing the disappointments and failures resulting from planting fruit on hardpan soils or in situations where untimely frost occurs. The bulletin defines quite closely both the character of land on which these failures were met and the area where the treacherous temperature conditions may be expected. Careless critics and readers have overlooked these definitions and have regarded the publication as reflecting upon the whole valley in which the specified area is located. This is a great mistake, and to show that the scope and purpose of the bulletin has been mistaken we emphasize the fact that it gives in considerable detail instances in the same general region of satisfactory success in the growth of certain fruits. The re-



Orchard of Mr. Andrew Nelson, Two Miles Northwest of Paso Robles.



Mr. G. Webster's Bartlett Pear Orchard.

gion in question is adjacent to Paso Robles and the district described as treacherous does not extend northward beyond San Miguel, nor does it extend westerly of the Salinas river, but is rather the country eastward from that stream. This is a small fraction of the great Salinas valley and critics have made sweeping comments upon very specific data.

The successes in adjacent parts even of the fraction of the valley noted are interesting and are very prominently mentioned in the bulletin. There are pictures of some of these satisfactory plantations upon this page. One is the orchard of Mr. Andrew Nelson, 2 miles northwest of Paso Robles. It shows an unusually even and full stand of trees for such sloping land. The fruits are almonds, nectarines, plums, prunes, apples, pears, figs and oranges—the

last were never injured by frost. Part of the trees were planted in 1890 and part in 1897. There has never been a failure of the fruit crop and the trees grow well, though not large, and appear healthy. Mr. Nelson finds "fruit growing profitable for the local market," especially "when the late spring frosts destroy the crops in the valley and east of the river."

Another view is in the pear orchard of Mr. G. Webster of Paso Robles, which is situated half a mile from San Miguel. He began to plant trees in 1893, and has continued until his orchards, in 1900, covered twenty-five acres (pears, peaches, apricots and prunes), and he planted in 1901 some 1700 Bartlett trees, making nearly thirty acres altogether of this pear, his best crop. Another picture gives

a general view of Mr. Webster's orchard.

Other successful orchards in the same district are those of M. Steinbeck at Templeton, which produces Bartlett pears regularly, though other fruits are uncertain.

Mr. Reynolds has his orchard on land on the Huero Huero where the ground water is within reach of the roots, but even with this advantage the aerial troubles cause him to doubt the profitability of orcharding. Mr. Corbaley, on the Estrella, has met many disappointments, but finds peaches and pears sometimes profitable. The two last named are in the condemned district and the degree of success attained is testimony to the unusual diligence and courage of the growers.



General View of the Orchard of Mr. G. Webster, Near San Miguel.

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E. J. WICKSON. Horticultural Editor

San Francisco, August 23, 1902.

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The Week.

The great visitation is over and city affairs are returning to normal courses. The exhibit of California products in the ferry building, to which we alluded appreciatively in advance, proved to be a very attractive feature and was carefully studied by thousands of strangers. The effect must be good, for many who came to California without serious intent of any kind found themselves deeply interested in our attractive industrial affairs. They will prove good preachers all through the Eastern country.

Wheat has been tossing about, but closes the week on about the level of the beginning. One straight cargo of wheat and three of barley and wheat mixed, have gone abroad—in all a value of about half a million. Barley has had the inside track and closes firm and higher. Oats are in better tone, in sympathy with barley, but have not advanced. Corn is doing little and is dull. Beans are moderately firm with a strong undertone, in spite of the approach of the new crop. Bran and other millstuffs are unchanged, but rolled barley is naturally higher. Hay is in large receipt but much has been previously bought in the country and the volume does not disturb values. Beef and mutton are steady but hogs are lower; receipts are increased and Eastern markets are weaker. The best butter is firm; the rest unchanged, some Eastern being worked in. Only the finest eggs are sought for; cold storage and Eastern eggs hold down the common grades of fresh. Cheese still keeps up well. The poultry market is cloyed; the appetites of the visitors were overestimated and it will take a few days to clear up the visible surplus. Potatoes are lower, though there is some movement at low figures. There is a hope of a cut in freight rates so our product can compete in the South with the Western product. Onions are rather weak, not much lower, but quiet. Australian shippers have not taken as many as was expected, claiming prices were too high. Fresh fruits are about the same as last week; canners are offering only very low prices. Dried fruits are quiet; buyers seem to be holding back, though doing some business. Prunes are said to be offering a shade lower, viz., Santa Claras at 2½ cents, with ½ cent premium, and outside prunes at 2¼ cents, with ½ cent premium. Almonds are firm at the last advance. The walnut prices are not yet fixed. Hops are quiet and contracts absent. Honey is firm, but not much doing, and the same

words fit the wool trade, though there is some buying of southern and middle counties at last week's figures. There has been quite free shipment of spring wool previously purchased.

The prune combine, known as the California Cured Fruit Association, is making full effort to render its memory hateful. It seems to be disposed to collect money for services which it never rendered and to enforce claims which, as we understand it, it had specifically renounced. Bills are being sent out by which thousands of growers are placed in the position of endeavoring to extort from each other penalties for refusing to entrust their fruit to an association which they all had practically repudiated. Apparently little is left of the Association but the officers, and they seem to be doing all they can to punish people for having honored and rewarded them. The whole thing is in a bad state.

Those who have desired to have University instruction in agriculture brought within their reach will be interested in the announcement, which we print upon another page of this issue, that the University of California will give this fall a short course covering ten weeks and including subjects most likely to be considered of direct and practical value to those who wish to acquire knowledge of up-to-date methods under California conditions. The short course is given at a time when farm work in most parts of California is most slack and absence from home will occasion least loss, the conditions of entrance are few and the cost will be little more than that of living. We trust readers of the PACIFIC RURAL PRESS will give close attention to the proposition and send their children or come themselves to the studies which are offered. In the agricultural classes of the Summer School which recently closed, the ages ran from 17 to 60, and the older ones proved, on the whole, the most attentive and were most profited by the work. The youthful spirit is not always conditioned upon age. The University desires to help all the people.

Another significant tribute to the value of American agricultural education is found in the fact that a foreign institution described as "a collegiate institution of high standing in Great Britain" is being reorganized and developed with special reference to agricultural science and practice, and advertises in this country for the following: (1) A professor of agriculture; (2) a professor of agricultural zoology; (3) a lecturer on agricultural chemistry; (4) an organizer and instructor in horticulture; (5) an organizer and instructor in poultry keeping. It is stated that the salaries are liberal and none but first-class men need apply. Granting eligibility to Americans for such positions involves recognition that the American directness and practicality in agricultural education are desirable elements in agricultural progress. What is now recognized in the old country has already been acted upon in the British colonies, as in South Africa and in the various States of Canada and Australia, where American instructors have been sought for and are rendering signally satisfactory services.

A very simple reform which fruit raisers could institute by general consent, without any formal organization, would be to weigh and grade their product themselves, each for himself, and sell on that basis. To do so would be to supply an honest basis for the whole fabric of trade; and not to do so is to invite the dealers to dishonest acts in grading and weighing or in reporting the same—an invitation which he can scarcely be blamed for accepting when it is generally and persistently extended, as at present, and which undermine the whole fabric of trade. Any honest dealer—and there are many, if not most, who can be included in that term—can very easily satisfy himself whether the growers' scales are true and how they compare with his own; and as for the grading, not even two packers grade exactly alike, and it is always open to the buyer to shade his price to suit the grading, as he does for any other reason, real or fanciful. The doubts of other persons and things generally which arise in the minds of growers from a lack of accurate knowledge of their own holdings are a stumbling block to effective business action of any sort on their part, competitive or co-operative.

QUERIES AND REPLIES.

Moss and Mistletoe.

TO THE EDITOR:—The moss and mistletoe are seriously injuring our trees, particularly the oaks. Can you suggest any method of destroying these parasites or preserving the trees?—SUBSCRIBER, Paso Robles.

There may be a question as to whether the oaks really need preservation from the moss and mistletoe. These parasitic growths have probably affected these trees since the beginning of things, and we still have oaks, and oaks there will probably be until the end of time. Undoubtedly, however, the oaks would be more thrifty if they were free from these growths, which limit their vigor to a certain extent, but whether the destruction of these parasites will be practiced on a large scale, or whether it would not be cheaper to plant new trees from time to time, so that they might ever be ready to rise to the struggle, in which the old trees seem to be yielding, is a question. Theoretically, there is no difficulty about cleaning the trees. Pulling off as much moss as possible, so as to allow an application to reach the bark, followed by a spraying with caustic lye, one pound to six gallons of water, will destroy the moss, and it will be some time before it can re-establish itself. Cutting out the mistletoe as cleanly as possible, to remove all parts of it from which latent buds can be developed, would also free the trees from this parasite, and free them for some time. The reproduction of the mistletoe is conditioned upon the carriage of the seeds from a fruiting plant and the deposit of the same upon the bark of the tree. The seed of the mistletoe is enveloped in a gummy substance, which helps it to attach itself to the rough bark. It is believed that the birds are the chief instruments in this distribution. They eat the mistletoe berries and in cleaning their bills of the gummy substance succeed in gluing down some seed, which germinates and takes root in the substance of the tree, as is its fashion. Now, to cut out mistletoe will be to prevent the production of the seed and consequently very greatly reduce the appearance of plants in new places. These methods prescribed for moss and mistletoe will increase the vigor of the oaks. They will, however, remove very much of the picturesqueness of the landscape, and the cost of the operations will be exceedingly great.

Forage Plants for Low Lands.

TO THE EDITOR:—I have a ten-acre field of dark adobe soil. It is too wet to be certain of fall-sown grain, and owing to its retaining moisture late in the spring it is very difficult to get it in shape for planting till after the rains are over. What grasses would you advise sowing, best combining the qualities of hay and pasture? Will any of the clovers be likely to do well on it? Would you advise planting the seed in fall or spring? I suppose alfalfa is out of the question. As I have said, it does not overflow, but moisture stands very close to the surface in winter, and owing to the non-porous nature of the soil it does not mellow up in the spring sufficiently early to be sure of a crop, and a heavy winter will drown out fall-sown grain.—READER, Scotia, Humboldt county.

After careful consideration of the conditions of soil and water which you describe in your letter we conclude that English rye grass—or, as it is sometimes called in California, Australian rye grass—would be best for you to try. It is a hardy grass, endures standing water—in fact, will make a heavy growth where there is too much water in the soil for most other grasses. Alfalfa would be out of the question, but it would be desirable to try red clover with the rye grass, because red clover, being a fibrous rooted plant, will survive excessive moisture for a considerable time. These seeds could be sown in the fall, when the ground is in good working condition, and would sprout and make some growth with the rains, and after that the rye grass at least would maintain itself satisfactorily, although the ground was water-soaked in winter. There are other grasses for wet land, but rye grass seed is readily secured from the dealers, and thus the plant becomes available at once.

A Variable Carnation.

TO THE EDITOR:—I send several pinks which grew upon the same plant in my garden. You will see that some are white, some white-striped with pink, and one stem has two flowers—one a clear deep pink and the other a white, with a center stripe of pink. We started with one plant in 1901 which bore white

flowers, fringed with faint pink. We planted three slips in 1902; one had white flowers, another a deep red and the third a light pink. The two last died, and from the first, which still survives, come the flowers which I send you. How do you explain it?—W. B. EWER, Piedmont.

The phenomena described are interesting, but not unusual. It is a manifestation of a variableness which rather frequently crops out. We had in our own yard a year or two ago exactly the same thing occur—a pink flower appearing on the same stem with a white and the plant usually bearing white flowers. There was red color in the ancestry of this plant, undoubtedly, and in these particular blossoms, for reasons that no one can explain, the old red color reappeared. If the blossom had been allowed to mature and seed taken from it, it perhaps would have yielded plants bearing a greater proportion of red than white flowers, because the disposition in this direction seems to be strong in this blossom and presumably would rule in its seed; but there is no reason for undertaking this, because we have plenty of good pink carnations on plants in which the type is very firmly established and, consequently, less liable to reversion. The fact that some of the flowers were white, some white-fringed or striped with pink, and one solid pink, simply shows that the forces in the plant are in unstable equilibrium, and the variety is consequently defective from a cultural point of view. Such a plant may be interesting to a propagator, but does not serve florists' purposes well.

Crab Grass in a Lawn.

TO THE EDITOR:—I hand you samples of grass which has sprung up in my lawn, completely crowding out the blue grass and white clover. What is the best means of ridding the lawn of this grass, and what is the name of the grass? The methods employed have been to weed it out and remove about 1½ inch of the turf, reseeding the ground. The only fertilizer used for several years has been the patent or prepared fertilizer.—CITY READER, Marysville.

The grass which you send is "crab grass" (*Panicum sanguinale*). It is a very bad weed. If you have a copy of the Year Book of the United States Department of Agriculture for 1895 you will see an account of it. The only way we know of to eradicate it is the way which you have already tried—that is, rooting out the plants wherever they appear and scattering fresh seed. Of course, if the lawn seems to be so thickly set with the plant that this is hopeless, the other recourse is to break up the ground roughly now, throwing up the sod to the action of heat and drouth as much as possible, in the hopes of killing out the grass; then after the rains come plow or dig deeply, turning under all the litter as deeply as possible, and resow with seed which the seedsmen will commend to you as free from weeds. Such seed will cost more than the ordinary commercial article, but is usually worth the added cost.

Asparagus Growing.

TO THE EDITOR:—Would the tide lands about Astoria do for commercial asparagus growing, or would the temperature here be too low? A few people have asparagus beds for home use and say they do well. There is not much sand in the soil generally, and when cultivated flat it is disposed to harden or bake.—OREGONIAN, Astoria.

We are not sure how the temperatures of which you speak would affect the plant, but probably it would be too low for the rapid growth which is necessary to secure large tender shoots. Conditions are so favorable in some parts of California that one operating under less favorable circumstances could not well compete. The growth of the plant which would be considered satisfactory in the garden would not be satisfactory in a commercial plantation. It is probable, too, that the soil you speak of is too heavy. The plant is grown in California in exceedingly light soils, a mixture of sand and decomposed vegetation, through which the plant can extend its roots and send up its shoots without encountering much opposition. The cultivation, too, of such soil is most easily and cheaply accomplished. Land which hardens or bakes is not at all suitable.

Cow Peas in California.

TO THE EDITOR:—To what extent are cow peas planted and grown in your State, and, if only in certain sections, in what sections are they most largely used? What is your opinion as to their value as soil

renovators for use in your State?—Cow PEA, Augusta, Georgia.

Cow peas are grown in California to a very limited extent. They are not hardy enough to endure our light winter frosts; consequently, can not be grown at the time when we need to grow leguminous plants for plowing under. We can not grow such plants in the summer for plowing under, because we have no moisture to spare at that time of the year; consequently, we have to seek for hardy legumes, like field peas, vetches, lupins, etc., and all these plants are being used to a considerable extent. The only cow peas in California are grown on low, moist lands, chiefly on river bottom, where moisture is present even during the dry summer, and under these conditions cow peas make a very heavy and satisfactory amount of verdure. For "soil renovators," however, they can not be widely used in this State for the reason stated.

Who Knows?

TO THE EDITOR:—Your excellent paper is read to the last page. Can you tell me where is the largest black oak in California? Is the story of the big tree—154 feet girth—near Sanger true?—READER, Saratoga.

We gave an account last week of a large black oak. Does any reader know of a larger one than 100 feet height and 90 feet spread of branches? If we were not too busy we would go up and measure that new big tree. Perhaps Mr. Yost of Kingsburg may be able to get us the facts about it.

Crude Oil Emulsion.

TO THE EDITOR:—How can I make an emulsion of crude petroleum, not only for spraying trees but mainly to be used in chicken houses, for which crude oil is most excellent?—E. C. W. MACDONALD, Santa Cruz county.

The preparation of crude oil emulsion is in the main like that of kerosene emulsion, except that more soap and water are generally used. A successful formula is the following:

Soap.....8 pounds
Crude petroleum.....10 gallons
Water.....10 gallons

Dissolve the soap with hot water, let it come to a boil and remove from the fire; add the oil and emulsify with a force pump, pumping back and forth until it becomes the color of cream. After it stands long enough to cool it becomes like gelatine, with a thin scum of oil over the top. If this is beaten up with a hoe or other implement the scum disappears and does not return. This can be used full strength with a brush in painting chicken houses or may be reduced with five times its bulk of water for spraying houses or for winter use on deciduous plants, or with ten times its bulk of water for use on foliage, though if a dry wind is blowing a little greater dilution is safer.

Soil for Alfalfa.

TO THE EDITOR:—Will alfalfa do well in sandy land where the water is within 5 feet of the top of the land? I know of a piece which was seeded about two years ago, but the stand is not as heavy and strong as it should be. An irrigation ditch runs through the place, so it can be watered as often as needed, but I am afraid that after a time, when the roots of the alfalfa get down into the water, it will kill the plant, so I thought I would ask your opinion.—READER, San Jose.

Alfalfa will grow well on the land you mention if the soil is not sand which is deficient in plant food. It will not, however, do so well, nor will it be so long lived as in places where it will have twice that depth of free soil. If the water level is apt to rise in the winter time nearer to the surface than 5 feet the failure of the plant will be hastened; but where there is 5 feet of free soil constantly the plant can be trusted to do as it likes about the water below and, other conditions being favorable, a good growth could be expected. Occasional irrigation would help the growth, even though the bottom water is near, and the land should be graded so that it can be flooded to kill gophers.

Crimson Clover.

TO THE EDITOR:—I notice that some seed firms speak highly of crimson clover as a crop for green manuring. Are they right?—ORCHARDIST, Riverside county.

Crimson clover is not under ordinary conditions an acceptable plant for green manuring in California,

because we desire to grow this green crop during the winter time with the surplus moisture furnished by the rains. Crimson clover will not endure frost; consequently a more hardy legume is necessary, and this is the reason why Californians are using field peas, burr clover, lupins, etc. If you wish to grow a green crop in the summer, and have irrigation water in free supply for that purpose, you could use crimson clover or cow peas, or some other more tender legume.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 18, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cool and partly cloudy weather prevailed during the week, with light thunder storms in the northern portion of the valley on the morning of the 11th and night of the 13th. On the evening of the 16th a thunder storm with heavy rain occurred at Sisson. These conditions retarded fruit drying, but caused no material damage. Grain threshing and hay baling are progressing. Fruit drying continues and large shipments of fruit are reported from some sections. Almond harvest is progressing. Hops are making good progress and a large crop is expected. Hop picking will commence during the coming week.

COAST AND BAY SECTIONS.

Generally cloudy and cool weather prevailed during the week, with light showers in some localities on the 10th and 14th, but these caused no damage. On the whole, the weather has been very good for growing summer crops. Beans, potatoes, beets and squash are doing very well. Fruit in the foothills is ripening nicely. The grain harvest is nearly over. The correspondent at Upper Lake states that the rainfall was the heaviest reported in August, with one exception, for eighteen years, amounting to 0.07 inch on the 10th. There was little, if any, damage and the effect will be beneficial to later crops. It is thought that the vintage will be much later than usual. Deciduous fruits are ripening rapidly. Picking, canning and drying are in progress, and in general the yields are heavy and the fruit of good quality. Where citrus fruits are grown they are reported to be doing well.

SAN JOAQUIN VALLEY.

Clear weather, with exceptionally cool nights, prevailed during the week. These conditions were favorable for grain harvest, but somewhat retarded the ripening and drying of fruit. Grain harvest is over in most sections and will be completed in about ten days. The yield of wheat and barley will be large in the northern portion of the valley. Fruit picking and drying are progressing rapidly. The deciduous fruit crop, except pears, will be large in most localities. Vines are in excellent condition and a large grape crop seems assured. Table grapes are being shipped in small quantities from some sections. Picking for drying will commence in some places in about a week. Green feed is scarce. Live stock is in good condition. The third crop of alfalfa is being harvested in some localities. Citrus fruits are doing well.

SOUTHERN CALIFORNIA.

Generally cool and partly cloudy weather prevailed during the week and was favorable for all crops. Grain harvest and threshing are about completed and large shipments are reported from Santa Maria. Deciduous fruits are generally below the average. Sweet potatoes will be about two-thirds of a crop. White beans are podding well, but vines are smaller than usual. Grapes are ripening rapidly and from present appearances picking will begin earlier than usual. Corn is being cut for fodder in some places. Citrus fruits are making good progress. At Riverside the Navel crop is reported to be short. Lemons are being held for better prices. Walnuts continue thrifty.

EUREKA SUMMARY.—Grain is short but well filled. Threshing is in progress, yielding an average crop. Outlook for fruit remains promising. Hay baling continues.

LOS ANGELES SUMMARY.—Apricots finished. Peach drying begun; fruit small. Berries rather scarce, except strawberries. In some sections oranges are dropping, materially lessening crop. Increased demand for irrigating water.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 20, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.00	.23	.03	.21	66	52
Red Bluff.....	.00	.00	T	.04	90	60
Sacramento.....	.00	T	T	.02	90	54
San Francisco.....	T	T	T	.02	72	56
Fresno.....	.00	T	T	.04	94	56
Independence.....	.00	.29	.42	.05	86	56
San Luis Obispo.....	.00	T	.18	.03	80	48
Los Angeles.....	.00	T	.09	.04	80	54
San Diego.....	.00	T	T	.05	72	62
Yuma.....	.00	.11	.22	.43	104	66

THE IRRIGATOR.

Riparian Rights and Irrigation Rights.

From a lecture by DR. W. R. THOMAS of Denver, Colo., at the Summer Session of the University of California.

AN INTERSTATE ISSUE.—The valley of the Arkansas is one of the largest, most fertile and most productive in all Colorado. Its agricultural and horticultural possibilities are not exceeded in the whole Rocky mountain region. It drains a watershed in Colorado of 50,000 square miles. Rising along the eastern slopes of the continental divide, it flows in a generally southeast course and emerges on the plains through the walls of the Royal gorge at Canyon City, at an altitude of 6000 feet above sea level.

The natural flow of the river was long ago appropriated for irrigation purposes, but the seepage from the land under cultivation and the inauguration of reservoir systems by the canal companies have added annually to the area of the cultivated portions of the valley. Like all plain streams, at certain periods of an unusually dry season the river bed of the Arkansas goes dry in not a few localities east of the Colorado line. This is no new phenomenon and was noted by the early hunters and plainsmen long before there was an irrigating ditch on any stream west of the Missouri, always excepting the Rio Grande in New Mexico under the Spanish regime.

Colorado was charged with having stolen the waters which belonged to Kansas by riparian right. The issue got into politics, and in February, 1901, the Legislature of that State, by concurrent resolution, authorized the Attorney-General thereof to bring suit against the State of Colorado to prevent the further and continued diversion of the waters of the Arkansas river. In the suit of one State against another the Supreme Court of the United States has original jurisdiction, and shortly after the action of the Legislature the Kansas Attorney-General filed in that tribunal a motion for leave to file a bill in equity against the State of Colorado.

Both suits are still pending, but their final determination is destined to have a far-reaching influence on the law of irrigation and the security of water rights. The ultimate adjudication of the issues involved will, without question, give rise to a popular demand for more direct legislation by Congress and by State Legislatures to conserve existing water rights and to protect agriculture by irrigation against the legal raids that may be organized against it. While in these two suits Colorado is directly attacked, and her interests directly involved, no State in which irrigation is practiced can feel unconcerned. If Colorado's progress be checked, and her prosperous and productive irrigated valleys laid waste by judicial decree, the ruin of the other States and Territories of the arid region can be the more easily effected, since decisions adverse to Colorado will constitute precedents by which their undoing can be the more speedily accomplished.

THE VIEW OF THE COURT.—I am not an alarmist, but I do not view the probable action of the court in these cases without a feeling of extreme doubt. I entertain only the most profound respect for the great tribunal before which these issues—so momentous to the arid West—are pending. I recognize its learning, its wisdom, its fairness, its disposition to do equal and exact justice, the personal and judicial integrity of each of its members. But in forecasting their decisions in these cases there are other considerations to be taken into account. There are mental processes and judicial environments from which the most learned and impartial jurists cannot escape, and which unconsciously influence their opinions and control their decisions. The justices of the Supreme Court have been grounded in the doctrines of the common law until they have come to regard its principles as scarcely less sacred than the commands of the Holy Writ. From the very earliest periods of judicial procedure courts have enforced the claims of riparian owners, and given protection to navigation rights in the interest of commerce, until it has come to be regarded as a binding obligation resting upon judges to do so. But now comes irrigation with its claim to appropriate the waters of running streams for the beneficial purpose of agriculture. Its needs and demands are so revolutionary, as compared with the judicially time-honored principles and precedents of the common law, that fears may well be expressed lest judges regard it as an interloper and an upstart. Herein is the danger. Irrigation is a new claimant for judicial favor and recognition, and its standing in the courts is yet to be fully and satisfactorily established. Judges and jurists have yet to learn, yet to appreciate, the fact that a new common law, born of new industrial and climatic conditions, of necessities unknown to other portions of the republic, or in former citadels of the old jurisprudence, has arisen in the vast domain of the Missouri. If this region is to continue to progress, if it is to become productive and prosperous, if its natural resources are to be developed, if its industries are to be encouraged and multiplied, if it is to be peopled by an intelligent, thriving, patriotic population, then

this new common law, the right to appropriate water for irrigation purposes, must not only be recognized but made a part of the fundamental law of the republic. Do the justices of the Supreme Court comprehend these facts, these conditions, these necessities? This question is yet to be determined. There are learned and eminent men on that bench who never saw an irrigating ditch, to whom agriculture by irrigation seems more a myth than a vast industry in which millions of dollars are invested, on which whole commonwealths are dependent for their very existence, and which involves the homes of millions of people, and who, because of a want of knowledge of the actually existing facts, fail to comprehend the destruction they are capable of working by their judicial decrees. No judge is competent to apply the law or to enforce equity as regards an industry affecting the rights and interests of a vast number of people who is not entirely familiar with the terms and practices and customs of said industry.

However excellent their intentions, I cannot but doubt the capacity of judges to intelligently and impartially determine a question so vital to the welfare of so many States, and so many communities, who have not some personal knowledge, at least, of the physical conditions prevailing in the region out of which have sprung the issues now at the bar of their courts.

CONGRESSIONAL VIEW.—But if the trend of judicial sentiment be regarded as against the right of the people of the arid West to appropriate the water of natural streams for purposes of irrigation, the trend of congressional legislation has been otherwise. In this fact lies the hope of the doctrine of prior appropriation as against all other pleas. You are all familiar with the manner in which mining rights, and water rights for mining, as well as for agriculture, took their rise on the public domain. So far as Colorado is concerned, these rights had taken form and obtained before the Territory was organized in 1861, and the same is true of other arid States. No code of laws in any nation, or at any period of time, ever sprung so directly from the people themselves. These codes were recognized as just, proper and necessary by the earliest Territorial Legislatures and transformed into statute law, and administered and enforced by the courts. Thus these rights became vested under local law and judicial practice. They lacked, however, congressional recognition, since the public domain was affected, and the Territories were subject to congressional or federal control.

RULINGS OF THE COURT.—The rulings of the Supreme Court of the United States on statutes must be accepted as law, from which there is no appeal, until Congress shall amend or change its acts. I submit that the only logical and legitimate deduction to be made from this decision is that every irrigation work constructed since the passage of the navigation Act of 1890 rests on the sufferance of the War Department, and its operation can be stopped any day by a writ of injunction or suit brought by the Attorney-General at the instance of the Secretary of War. Such a conclusion is absolutely distinctive of all irrigation rights. That a demand should go up from the irrigated States for a plain and direct declaration on the part of Congress nullifying this view of the law, as presented by Justice Brewer, need hardly be affirmed.

NEW IRRIGATION LAW.—I need hardly characterize the beneficence of the late irrigation bill as it has come from the hands of the present Congress. Enacted just forty years after the passage of the homestead bill in 1862, it is a fitting supplement to a measure that received the approving signature of Abraham Lincoln. In the future annals of the republic these two laws will take a foremost rank as having exercised a more far-reaching influence on the happiness and prosperity of the American people than have ever found place on the statute books of the nation. The two portions of the bill worthy of special notice are (1) that the Federal Government is to act as the conservator of the water supply of the arid region, and (2) that the active control and direction of water distribution shall remain with the States.

But riparian rights attach to the individual citizen, not to the sovereign State. Water rights are the property of the citizens of the respective States wherein the same are claimed, and not the property of the State.

THE COMMON LAW.—The common law of England—*Leges non scriptae*—is the priceless heritage of the English speaking race. It grew up from the customs and usages of our Saxon ancestors in primitive times. Its elementary principles have excited the wonder and admiration of philosophers and commentators for centuries. From time to time its rules and precepts have been adopted in Acts of Parliament. It was transplanted to America and received the recognition of courts and congresses and legislative assemblies. This law sprang from the people, and was evolved from their environments, their necessities, their conditions, and it stands to-day as a shining illustration of the native sense of right and justice which existed in the breast of the Saxon race as it first appeared in written history. But new conditions, new necessities, new methods and natural surroundings call for the modification of statutes the most just and ancient. Centuries after the common

law took root in England the descendants of the Saxon conquerors, still on their westward march, found themselves in a new land and amid natural environments which required new rules for the regulation of human conduct and human rights.

THE UNIVERSITIES' OPPORTUNITY.—It is, indeed, a hostage for the future, an augury than which none could be more assuring, none more potent in its beneficent influence on the decades and centuries yet to come, that a great university, recognizing its relations to the people, and its obligations to the commonwealth and the republic, should establish a department of irrigation, and in its regular curricula, as well as in the less formal courses of its summer school, give instruction upon the legal, economic, social and industrial features of irrigation, as well as upon its engineering and practical requirements. This is a broadening of the university spirit, an extension of university work and accomplishment, that can be contemplated only with feelings of the most profound patriotic satisfaction. While the real progress of the human race, the forward march of civilization in all centuries, the light of learning that fills the world to-day with radiant glow, is due to the university spirit, there have been periods when the culture of the school has wrapped itself in ascetic robes, and stood aloof from the masses of mankind. But the twentieth century tolerates no such exclusiveness. The university spirit to-day reflects the broadest and most enlightened tendencies of the time. Fired by this spirit, inspired by a zeal unprecedented in the annals of educational endeavor, the University of California is carrying culture beyond the circle of the so-called learned professions to the farms, the mines, the factories, to the homes of those who toil, to the firesides of the people on whose intelligence and integrity and patriotism rests the safety of the republic and the perpetuity of free institutions. From the instructions here given, from the lessons here learned, from the principles here impressed, there will come to the youth of this mighty empire of plains and valleys, of mountain and coast, a more varied intelligence, a more generous culture, a broader spirit of tolerance, a keener sense of justice, a more kindly humanity. These impulses will be reflected in their laws as enacted by State and National Legislatures, in their judicial opinions as they emanate from the courts of justice, in their citizenship and their performance of public duties, in their individual lives and homes, in all the attributes of their manhood and womanhood. These triumphs of the university spirit will be signalized by the new landscape that irrigation will bring to the arid West; by the new prosperity that will come with the farms and gardens and orchards that will spring up in the once dry and thirsty lands; by the new industrial energies that an increased production will generate; by the new commerce whose merchant fleets will ride the waves of the Pacific sea, bearing the products of millions of irrigated acres to the Orient, and returning freighted with the treasures of the distant east. These forces will concentrate in the creation of a new civilization, of a new age of civic renown, of new eras of human happiness, of new and clearer visions of the imperial destiny of the republic. This is, indeed, a consummation worthy the effort of a great institution of learning, and this shall be the crowning achievement of the University of California.

The Progress in Irrigation.

TO THE EDITOR:—The progress in agriculture in the arid States and Territories during the decade ending with 1899 is shown in the report just published by the Division of Agriculture of the Twelfth Census. As this progress is attributed largely to irrigation, the statistics relating thereto are of general interest.

The number of irrigators in the United States in 1899, not including irrigators of rice, was 108,218, an increase in ten years of 99.9%. The area irrigated was 7,539,545 acres, an increase of 107.6%. Of this area, 5,944,412 acres were in crops and 1,595,133 acres in pasture and unmatured crops. The cost of irrigation systems in operation, exclusive of those on rice plantations, was \$67,770,942, while the value of the irrigated crops was \$86,860,491.

The total length of all the main ditches in the arid and semi-arid States and Territories was 44,149 miles.

The average number of irrigated acres in farms in arid States and Territories was 71; the average value of irrigated land per acre, \$42.53; the average value of crops produced on irrigated land, \$14.81; the average first cost of water, \$7.80; the average annual cost of maintenance, 38c. Of the 5,711,965 acres in crops, hay and forage occupied 3,665,654, or 64.2%; cereals, 1,399,709, or 24.5%; vegetables, 168,432, or 2.9%; orchard fruits, 251,289, or 4.4%; other crops, 226,881, or 4.0%. The value of the hay and forage was \$34,834,966; cereals, \$14,338,326; vegetables, \$9,627,491; orchard fruits, \$8,920,409; other crops, including sub-tropical fruits, grapes, flowers, plants, sugar beets, etc., \$16,712,246.

In California the number of irrigators increased from 13,732 in 1889 to 25,675 in 1899, or 87%, and the number of acres irrigated from 1,004,233 to 1,446,114,

or 44%. The average value of farmland per acre was \$21.87; of irrigated land, \$89.19. The ditches in operation for irrigation purposes in 1899 had a length of 5106 miles, cost \$12,855,012. There were 152,506 acres irrigated from wells. The irrigated area in crops was 1,158,178 acres, yielding products valued at \$32,975,361. The area irrigated in pasture was 287,694 acres.

Shortly after sending the irrigation bill to the President, Congress passed a resolution authorizing the Director of the Census to compile statistics relating to irrigation for the crop year of 1902. With the data now assembled, this work will be comparatively simple, most of it being done by correspondence. To secure this information inquiries will soon be sent out to irrigators throughout the United States. The co-operation of those interested in irrigation is earnestly solicited, for upon their prompt response will depend very largely the value of these statistics. This is in part a supplementary work, the results of which will be utilized in the work soon to be undertaken by the Department of the Interior under the provisions of the irrigation bill.

Washington, D. C.

SPECIAL.

HORTICULTURE.

Apple Packages Discussed.

California apple growers and shippers will be interested in a discussion of apple packages at the meeting of the National Apple Shippers' Convention held last week in Rochester, New York. A paper on the subject was presented by R. J. Graham of Belleville, Ontario, in the course of which he said:

The barrel is the standard used for perhaps 90% of the fruit, but is it the best? California has adopted the box of four or five tiers averaging about forty pounds net of fruit, and this package is getting quite popular in some localities and has the advantage of being more suitable for a grocer to handle as package goods. Many people would buy a box of those apples who could not be induced to buy a barrel at a time. When apples are retailed by the pound, much of the fruit is injured by the customer or dealer turning it over, pinching it and examining it in a variety of ways that would not be done in a package. The cost of the package is about the same in each case.

For the home trade and immediate use, the bushel crate is becoming quite popular in Michigan and has some advantages. It is cheaper than the barrel, saves all expense of packing, can be easier handled, all the fruit is open to view, any farmer can bring apples to the depot direct from the trees, and is a convenient package for the dealer and consumer when the apples are required for prompt use.

For high class trade a compartment box is coming into use, and has been favorably received in the markets of Europe. These boxes are made to hold various amounts and different sized apples, and are made something like an egg case, each apple having a compartment by itself and is thoroughly ventilated. A firm in London, Ontario, is now manufacturing these, samples of which are here. The fruit growers of Niagara district are using them quite extensively. They cost more than a barrel, but for a high class trade there is nothing better. Apples stored in these packages for the Pan-American exhibition with the Buffalo Cold Storage Co., kept in good condition for a year. One thing is essential to the transportation of apples in any package, viz., air circulation. I feel convinced that fully 50% of our apples are ruined from improper transportation from some of the causes referred to, and if we, as apple shippers, ever expect to climb the ladder of success to its topmost step, it can only be accomplished by giving this most important question our earnest consideration.

DISCUSSION.—Mr. Graham's paper caused considerable discussion about the relative merits of the barrel and the box as apple packages. In reply to a question from C. H. Williamson, Mr. Graham said he thought 75% of apples would continue to go in barrels. Replying to D. S. Beckwith's question, he said in general he advised barrels for storage apples. Mr. Beckwith strongly commended barrels for general purposes, as against boxes, except in case of some fancy varieties.

APPLES IN GERMANY.—A paper was presented from Prof. J. C. Whitten, who is now in Germany, in which he said: The small package has the advantage in price; the smaller the package, the better the price. The finest apples are offered for sale attractively put up, two to twelve in a small basket. No one wants fine apples by the barrel. A large quantity opposes the idea of luxury. The conservative European epicure must have something that does not exist in sufficient quantity to make it "common." The smaller the package, also the more uniformly can the fruit in it be selected. In order to secure the highest price every apple should be uniform in every respect with its neighbors.

Attention must also be given to the requirements of different markets. For example, Berlin wants yellow apples, while Hamburg prefers red ones. Formerly, before apples were much shipped and every city had to depend upon locally grown fruit for its supply, the

best sorts grown in the region accessible to Berlin happened to be yellow apples. The people still cling to the tradition that the best apples are yellow ones. So marked is this preference that the grower in shipping Gravensteins, a variety which varies from rich yellow to well covered with red, sends the yellow ones to Berlin and the red ones to Hamburg.

Dewberry Figures.

Last spring we gave an account of dewberry growing from the Los Angeles Herald, in which the work of W. M. Gray of Gardena was described. The same journal now publishes an account by Mr. Gray of the season's yield, etc., as follows:

The one and a half acres yielded 40,140 boxes, or 1338 crates. The half-acre of two-year-old vines made 15,510 boxes, or 517 crates, averaging twenty-eight pounds per crate. There are twenty-two rows, 208 feet long; size of plat, 208x104 feet.

I sold the berries from this plat to one commission merchant, and from the year-old vines to another. I could in this way get a more correct statement with less trouble.

The berries from the half-acre averaged \$1.55 per crate, \$801.35 in all, over \$36 per row, weighing 14,476 pounds, or over seven tons.

A large yield of corn for a half-acre would be 3000 pounds, or one and a half tons—quite a showing in favor of the dewberry.

The old vines are now all cut off close to the ground, vines burned, the ground irrigated, cultivated and hoed, and the new growth is now 6 to 7 inches high. I also took from the half-acre last winter 17,500 plants, the sale of which, added to berries, makes \$1161.35 for the half-acre.

THE STABLE.

An Australian Account of California Mule Growing.

California's share in the important mule product of the United States has often been mentioned in these columns. A very interesting account along the same line comes to us in the Pastoralist's Review, an Australian journal which may be found to contain news even to many Californians:

AMERICAN MULE PRODUCT.—The experience quoted is that obtained at first hand in the Middle and Western States of America; and when it is stated that during the last completed fiscal year, ending June, 1901, there were shipped on British Government account to South Africa over 26,000 mules from the ports of New Orleans and Galveston alone, it may be assumed that the raising of such stock in the United States is far past the experimental stage. Although mules are largely reared throughout the Middle States, the hardiest are bred in the lower regions of the Sierras and the Rocky mountains, the main characteristic of which is broken stony country, interspersed with small valleys, where there is always plenty of water, and in which coarse natural grasses are in greater or less abundance in accordance with the season. This entails much traveling of the stock over the rocky ground to pick up a living, also exposure to the severe winter weather which prevails. Much importance is ascribed to such conditions, and it is claimed in the comparison of the relative value of mules and horses that the lesser necessity for shoeing mules, the less nutritious food upon which mules will work and grow fat, the lesser liability to sickness and their greater longevity are largely due to the conditions to which the mules have thus been accustomed when young.

CALIFORNIA JACKS.—In former years many stallion jacks were imported from France and Spain for use in America, but latterly the jacks bred in Kentucky are considered equally good. Excellent jacks are also bred in the States of California, Washington and Oregon, on the west coast. In selecting mares for mule breeding, particular attention is given to size and bone, combined with as much quality as circumstances may allow. Those preferred by many are the progeny of Clydesdale stallions and Norman mares, from four years of age and upwards, even to fifteen years if constitutionally sound. Breeders consider the size of the jack to be less material so long as he readily covers mares, is a foal getter and has good offspring. Long-legged, large-bodied jacks are not in favor, but relatively small, nuggety animals, having plenty of bone and small heads, are preferred. In America the true value of a jack is very properly assessed by his first year's colts. If these are attractive his value is doubled forthwith, and is further enhanced as such develop satisfactorily.

Californian bred jacks are about 14½ hands in height, from 65 to 75 inches in girth behind the shoulder and weigh 850 to 900 pounds at five years. The present value of such animals at the ranches cannot be put at much less than £200 each for four-year-old to six-year-old jacks having good offspring in evidence. To this is to be added £40 or £50 for expenses and freight by mail steamer, say £225 to £250 landed in Australia or New Zealand.

In America special care is exercised in keeping

jacks intended for mule breeding apart from other donkeys or mules. It is customary for such a jack to be weaned at an early age, and from that time kept apart from other donkeys and mules, and let run with horses. It is stated to be necessary to keep jacks intended for covering mares beyond even the smell of mules. At three years of age the jack is broken to serve mares, and is then kept in a large, roomy loose box apart from other animals, in most cases also in semi-darkness, and, as a rule, he is not allowed to see any other animal but the mare he is brought out to cover. It is found that jacks so treated take readily to mares.

HANDLING JACKS.—It is noticeable that very great care is usually taken of the jacks, even to the extent of keeping their stalls flyproof. Hard floors to the stalls are also considered essential, owing to the habit some jacks have of standing in soft ground on the foreparts of the hoofs, which gradually causes malformation, which is said to be transmissible to the offspring. It is said that a matured jack, if properly fed, exercised and handled, should serve from sixty to seventy head of mares in a season and get from 60% to 70% of foals. In America it is considered preferable to put two mares to the jack one day and one mare the next day, it being the opinion that by so doing the jack keeps vigorous throughout the whole season. The mare to be served is generally first teased with an entire horse, and not put to the jack before she is ready to receive him. She is then backed into a shallow pit sloping toward the rear, and enclosed with railing about 4 feet high in front and 2 feet behind, with width according to the size of the animal. A light bar is passed in front of the mare's breast, and, to obviate the chance of her kicking the jack, a stout frame of planking is inserted behind her heels.

Provided the above precautions are taken, it is not found that there is trouble in getting jacks to cover mares, but most breeders are agreed that if a jack be allowed to cover a "jenny"—a female donkey—he will not afterwards cohabit with mares during the same season, and it is said to be frequently the case that he will not again cover any but his own kind.

It can readily be imagined that jacks treated as above described develop peculiarities. Vice, however, seems to be generally absent, but there are frequent cases on record of accidents due to nervousness of stallion jacks. In one case a farm hand who had been attending to some jacks for several years purchased one, and started taking him elsewhere. When fording a comparatively shallow stream the jack became alarmed when the water touched his body, and deliberately drowned himself, despite the efforts of his owner, who, being alone, was helpless.

AMERICAN MULES.—Mules, as a class, are generally regarded by people in Australia and New Zealand as being mostly small animals of light weights, and, consequently, less useful than horses for the heavy agricultural and cartage work mostly required. Such description correctly applies to most of the animals hitherto reared locally, but that both size and weight is as obtainable, with proper breeding, in mules as in horses can be gathered from the following particulars of a large number of mules purchased last year in America for the Fiji estates of the Colonial Sugar Refining Co. of Sydney, to whom we are indebted for the information:

Weight.	Mules.
Under 1000 lbs. each.....	54
From 1000 to 1100 lbs. each.....	263
From 1100 to 1200 lbs. each.....	210
Over 1200 lbs. each.....	87

Total shipped.....614

The ages of these mules were four to six years; height, 14½ to 16½ hands. The twenty heaviest mules ranged from 1310 to 1580 pounds each.

Mules are not generally valued by their apparent indications of good breeding, which are usually important factors in the selection of horses, but by their bone and the weight they scale. They are seldom as fleshy as horses, and it is probably within the mark to say that two 1300-pound mules will draw heavier loads in constant work than two horses each weighing 1400 to 1500 pounds.

MULES OR HORSES.—The general manager of the Sugar Co. informs us that values in America for the stock they purchased were found to range from £15 to £20 per head, also that the expenses and the freight to Fiji about doubled the prime cost. Their experience, however, was that, for the heavy work necessary under trying conditions of a tropical climate, such relatively higher cost of mules from America, as compared with horses from Australia, was fully warranted by the less expense for fodder, by the lesser liability to sickness and by the greater longevity of the mules, regarding which points the following experience of large numbers of mules during several years is allowed to be quoted for information. The relative cost of fodder and death rate is: Fodder, as 1 horse to 3 mules; death rate, as 2½ horses to 1 mule. In other words, three mules are fed at the cost of feeding one horse. With equal numbers of horses and mules working, five horses are lost by death for every two mules that die.

THE DAIRY.

Dairy Doings at the State Fair.

The third of the quarterly butter contests of this Association will occur at the State Fair, at Sacramento, next month. The contest is open to all butter makers and creameries in California and prizes to the amount of over \$350 in cash will be awarded. Those who have entered the two preceding contests of the Association will be credited with the score made in this contest which will figure into their average score in the four contests, the highest average score to carry with it the championship of California. The final contest will be held in December. Each contest is independent of the others and an exhibitor can enter one or all of them and compete for the prizes.

Butter, to enter this contest, must be made on or before September 8, and be immediately shipped either to the secretary at San Francisco (through a commission house, if desired) or to the State Fair Pavilion, at Sacramento. Expressage should be prepaid. The Fair management has provided a good refrigerator in which the butter can be stored until all is scored at the same time, which will not be until after the 13th. This allows five days for the butter to arrive, giving the most distant exhibitor the same age of butter as that made near Sacramento. All butter will be in the refrigerator at least twelve hours before scoring, so that it will be in good condition for scoring when the judges take it in hand.

The butter will be sold for all that can be obtained for it and remittance made to the exhibitor for the proceeds, unless the superintendent gets other instructions from the exhibitor.

The judges will be Messrs. W. H. Roussel, W. D. McArthur and Leroy Anderson, whose judgment has given general satisfaction in former contests. Entries will be scored on the following basis:

Flavor.....	45
Body.....	30
Color.....	10
Salt.....	10
Package.....	5
Total.....	100

Butter for this contest should be packed in twenty-five-pound tubs with parchment linings, a card with the name of the exhibitor and creamery tacked (not pasted or written) on the tub. It should then be wrapped in paper and burlap, or packed in a case, and shipping tag placed on the outside. If more convenient, any other form of package may be used, provided there are no marks upon it or the butter that cannot be readily removed when the entry is numbered and registered so that the judges may have no knowledge as to the identity of the butter when scoring.

Liberal prizes are offered by the Fair management and no entry fee is charged as in former years. It costs but a very little trouble to compete for these valuable prizes and the knowledge to be gained through such a contest.

THE STATE DAIRY CONVENTION.—During the contest, on September 16 and 17, the State Dairy Association will hold its annual convention in the Senate Chamber at Sacramento. At this convention a very interesting and instructive programme will be presented and leading dairymen, creamery operators and specialists will make addresses and discuss questions of great value and practical importance to every one interested in the dairy industry. All are urged to be present at the convention and participate in the discussion, especially upon the question of the practical value and importance of the practice of scientific methods in the manipulation of milk and the manufacture of butter.

HENRY F. LYON,

President Creamery Operators' Association.
WM. H. SAYLOR, Secretary,
114 California street, San Francisco.

Alfalfa vs. Bran as a Milk Feed.

Vice-Director F. E. Emery of the Wyoming Experiment Station gives the results of a trial of alfalfa as compared with wheat bran as follows:

A neighbor's milch cow that had been in production since June, 1901, was used for this trial. She was yielding 8½ quarts of milk, on a daily ration of 22 pounds of native hay and 8.1 pounds of wheat bran. This was determined by weighing the food and product carefully for ten days. It was proposed to change the food by substituting alfalfa hay for part of the wheat bran to note the effect of this substitution on the yield of milk.

Wheat bran and alfalfa have a very similar composition and very nearly the same amount of digestible constituents. Digestible nutrients in 100 pounds of:

	Crude Protein.	Nitrogen-free Extract.	Ether Extract.
	Lbs.	Lbs.	Lbs.
Alfalfa.....	13.24	39.26	0.89
Wheat bran.....	12.02	39.02	2.7

The alfalfa has the advantage in protein and wheat bran in fat. Wheat bran is well known to be a very efficient food for the production of milk. On the

other hand, considerable of the relative energy of the alfalfa is used up in the extra work necessary to chew it and pass it through the system. For the ten days next succeeding the period on which the weights of food and milk were determined the bran was reduced to 3 pounds, and alfalfa hay was fed freely mornings and hay of native grasses at night. The food consumed during this period was: Wheat bran 3 pounds, alfalfa hay 13.97 pounds, native hay 11.91 pounds. This ration contained 5.1 pounds less of bran and only 3.88 pounds more hay than did the former.

The yield of milk was gradually reduced. The lowest daily yield—on the seventh day—was 15.7 pounds, the average for ten days being 16.87 pounds, or 7½ quarts. This shows nearly a quart of milk a day less than during the previous ten days. This period is not long enough to be sure that some recovery might have resulted when the cow's system had fully accommodated itself to the change of food.

During the next ten days a return was made to the original ration, nearly 8 pounds of wheat bran, with hay of native grasses fed ad libitum. During this period 22.78 pounds of hay was consumed per day. The yield of milk advanced slightly, but enough to show a plain though slight advance to 17.16 pounds, or 7.9 quarts.

The average cost of production of the first and third periods, when alfalfa was a part of the ration, and a small amount of wheat bran was used, was only 17.44 cents a day. This produced 7½ quarts of milk. The lower yield was at a lower cost by 5½ cents, when hay was worth \$10 per ton and wheat bran \$1.50 per hundredweight on the local market in Laramie.

The larger amount of bran produced the highest yield, but economy of production was with the alfalfa ration.

The Record Corrected.

TO THE EDITOR:—The report of the Holstein-Friesian cow Fidessa No. 43105 was incorrect as regards the thirty days' production of butter fat, as given on page 101 of the PACIFIC RURAL PRESS of August 16. The production of butter fat for thirty days was 73.079 pounds, instead of 91.3488 pounds.

J. E. ROADHOUSE.

THE POULTRY YARD.

How Johnny Bull Likes Poultry Products.

Mr. Samuel Smith, U. S. Consul at Moscow, writes that a special committee has been appointed by the Russian Agricultural Department to promote the exportation of beef, eggs, fowls, butter, etc., from Russia to the English markets. The president of the committee has visited England and investigated the markets there, and has found an excellent opening for Russian products. From the data given, England imported last year eggs to the value of \$25,830,000, of which the import from Russia amounted to \$5,675,000. In regard to poultry, England appears to be one of the largest consumers in Europe. In 1901, it imported poultry and game to the value of \$4,609,475, the greater part of which came from France, and then from Russia, Belgium, Holland and Denmark.

In 1901 the exports of Russia in this line amounted to \$23,311,000, classified as follows:

Eggs.....	\$17,696,000
White and yolk of eggs.....	969,500
Down and feathers.....	75,000
Dressed poultry.....	1,256,500
Live geese.....	2,780,000
All other live poultry.....	584,000

The Guinea Fowl in California.

Mr. F. W. Hawes writes to the Orange Judd Farmer that, according to his experience in California, few people know the real worth of the guinea fowl. She holds the championship as an egg producer, scarcely taking a day off. The eggs, while seemingly small, afford quite as much eating as the average hen's egg, for the reason that the shell is very full. In quality they are superior to other eggs and possess a finer flavor.

Another very valuable feature, and one to which many object, is their continual racket. Their cry of "buckwheat" is no more annoying than the quacking of a duck, but the ear-piercing screech is only occasioned by the approach of danger. This is their means of defense, and while they are defending themselves the other fowls are safe as well. There is no danger of chicks being carried off by hawks if there are guineas around. Upon the approach of a hawk he is greeted by such a volley of screams and cries as to frighten him away. Should he be daring enough to come on, he will be met in the air by the guinea, who will give him battle, as I have seen demonstrated many times with my own guineas. It is generally the cocks that exhibit so much bravery, and the hen with chicks.

Although the guinea hen hides her nest, she unknowingly reveals her secret. On the nest she utters a peculiar cry every few minutes, which is

different from that made at any other time. By this means the nest is easily found. The flesh of the guinea is dark, like that of wild game. The young are very good eating, as the flesh is tender, sweet and gamy.

Fruit and Eggs.

TO THE EDITOR:—As to whether or not a liberal supply of fresh fruit fed to hens has the effect of lessening the egg yield there is a difference of opinion. While some poultrymen contend that this result invariably follows, others are as strong in their assertions to the contrary.

A gentleman once told the writer that his hens, having free range in a cherry orchard in fruiting time, did not lay as many eggs as they did before the fruit was ripe. Likewise, the unlimited eating of apricots or apples has been thought to lessen the egg output.

As you point out in an answer to a correspondent last week, hens are in moult at this season of the year, and, as a matter of course, will not lay as many eggs as in the spring months, whether they now have access to fruit or not. The experience of the writer is that excellent results are obtained from allowing hens the free run of an orchard of varied fruits. The fowls eagerly devour all kinds with a keen relish, and one would judge that the birds greatly appreciated the juicy peach, the succulent pear, the tart apple or the luscious cherry at a period when the supply of green grass is exceedingly limited.

One yard of White Minorcas, now in heavy moult, is yielding from 40% to 80% of the large-sized eggs for which these birds are noted. A larger flock of White Leghorns, with free range, is giving from 40% to 60%. These two varieties of fowls will merit the appellation of egg machines.

An exclusive fruit diet will as a matter of course reduce the egg yield. An exclusive grain diet will have a like result, especially at this season of the year. A varied bill of fare is needed and watchful care. Fowls, more than any other money-producers on the farm, probably, will the more quickly respond to kind treatment. Even a person unacquainted with the business can readily distinguish between flocks that have haphazard treatment and those whose every want is anticipated.

A medium sized flock will often prove more profitable than one of double the number. On a farm near by are 200 hens that are now giving the owner fifteen or twenty eggs daily. On an adjoining ranch less than one hundred hens have a record of from forty to sixty eggs each day. Why should there be this difference? There may be several reasons. In the first place much depends upon the breed of fowl one keeps. Too often no especial attention is paid to breeding. There is a mixture to be found on many farms that would baffle description by an expert. A little of this, more of that blood, resulting in a flock of nondescripts.

Then there comes the system of feeding and of general treatment. Here lies, we think, as much as anywhere, the secret of making fowls produce the greatest number of eggs. If it is possible to get better returns from a small flock than from a larger one, of course it is unwise to keep on hand a lot of unproductive fowls. But if one has attained success with a few hens, why not apply the same methods in managing larger numbers? Where few only are kept—say 100 or 150—they will, in most cases, receive careful attention. The reason larger flocks are not as profitable, proportionately, is that they are more or less neglected.

Napa, Aug. 20, 1902. A. WARREN ROBINSON.

The Honey Situation.

TO THE EDITOR:—The honey flow has stopped entirely in this part of the valley. There will not be one-third of a crop in Fresno county this season. The county will have to rake and scrape to get 10 cars, against 14 last year, 16 in 1900 and 30 in 1899. The Association, with thirty-six members, representing between 4500 to 5000 hives, are not expecting over four cars, or sixty tons.

This has been an off year for the California bee men in general. The spring was cold and windy, the summer unusually hot, and now we are having cold and windy nights. Taking it all in all, the season has been a freak. Besides, we have the small butterflies by the millions here in the valley that are working on and blighting the alfalfa, which shuts off the nectar flow entirely. Spike weed, which this locality has been blessed with in former years, is a total failure, owing to the dry spring.

The crop is practically all in the hands of the producer yet. I have reason to believe that the shippers have themselves in a very close place trying to fill orders which they engaged on the big prospect which was imminent in the spring.

Yet the honey price is not what it should be, being sought after at 4½ cents, with some encouragement at 5 cents, some having been sold in July for 4 and 4½ cents, also a few tons at 4½ cents. There will be no more to offer until all is cleaned up—say in fifteen or twenty days.

J. F. CROWDER,
Selma. Mgr. Cal. Beekeepers' Association.

Agricultural Review.

ALAMEDA.

FRUIT PRICES LOW.—Niles Herald: The apricot season is about over. The crop has not been as large as anticipated. It is estimated there was a loss of 150 tons from dry rot in the township and more than that from drying up of fruit on the trees. The cause of the former is not known nor has there been discovered anything to overcome the trouble. The drying up is caused from overproduction apparently. E. A. Ellsworth reports that where he had expected to dry 1500 tons of apricots he has handled 1200 tons. He says prices are low with no demand. He quotes $4\frac{1}{2}$ to $5\frac{1}{2}$ cents. The prunes and plums are now ripening and prices are equally as low, with no market. While Mr. Ellsworth offered \$15 early in the season, one can now get any quantity for \$8 to \$10 per ton. White plums are quoted at \$6 to \$12, and French prunes at \$6 to \$15. Peaches are a drug at \$8, while No. 1 pears bring only \$8 80, with heavy offerings.

COLUSA.

A CORN HARVESTER.—Herald: W. C. Spaulding will have a corn harvester here on next Tuesday's boat for J. Bowden, and as soon as it can arrive from the East will also have for the same gentleman a husker and shredder. The harvester cuts and binds the corn and the husker and shredder husks and shells the corn and at the same time cuts the fodder into shreds. The weight of the machine is about 6000 pounds, and it will be the first one introduced in this part of the State.

FRESNO.

PRICES FOR DRIED FRUIT.—Republican: The dried fruit men have been buying up peaches, but the purchases have not been heavy so far, and only the early varieties are being taken. The usual price being offered is $4\frac{1}{2}$ c, though occasional good lots bring $4\frac{3}{4}$ c. The apricot season is now completely over, and growers are beginning to count up their profits. An average would probably strike $5\frac{1}{2}$ c per pound for the dried apricot output of this county.

SIAMESE TWIN MELONS.—Democrat: A. V. Linesby has a prize winner in the line of freak watermelons. The melon or melons, for it is really a bunch of two grown together, are of the Sicily variety; dark green in color with regular stripes; the flesh of deepest, most appetizing red and the seeds jet black. It is a variety seldom seen in this State, though much grown in the East. It is not popular with shippers because the rind is too thin for shipping. But the peculiarity of these two melons is that they are facsimiles of each other and attached at the median line. The markings are similar throughout and the melons are of equal size. Even the stem is double, the junction being in the center. It is not uncommon to see double melons, but to find a pair of "Siamese" is exceedingly rare. The melon was grown in National colony by S. G. Johnson, whose patch was recently purchased by the Fresno Melon Company.

LOS ANGELES.

APRICOTS ALL DRIED AND ALL SOLD.—Pasadena Star: Ericson & Co. have done with the season's crop of apricots. They handled over one hundred tons of green fruit. The fruit, though small, is of good quality. Already they have found sale for their dried apricots and are busy sacking them. The buyers are a firm in Los Angeles.

FRUIT CANNERS AND DRYERS BUSY.—Pomona Progress: G. H. Waters & Co. of the cannery are now shipping their canned apricots of this season's run to the East. On account of the great apricot crop this year only enough of the fruit was canned to fill the firm's Eastern orders, the output being seven carloads of 500 cases each, or about 86,000. The firm dried about 200 tons of apricots, which have been stored. The plant is now in readiness to receive peaches, 400 tons of fine stock having already been contracted for at Fresno. Waters & Co. expect to put up fully fifty carloads of peaches and the rest of the fruit will be obtained from this valley, where it is estimated that there will be 3000 tons as far east as Cucamonga. The several drying associations and firms are preparing to care for the peach crop, which is about ready for gathering. J. J. White, who has dried 93 tons of apricots at his own yard and 156 tons at the Loud & Gerling plant, is making ready to dry peaches on a large scale. McClenny & Co. have dried 150 tons of apricots at their plant opposite the cannery, and are preparing to dry peaches.

MONTEREY.

FLAMES DESTROY 45,000 ACRES OF PASTURAGE.—As the result of the carelessness of unknown hunters last week a

grain fire extended over the Tulareitos and Toro ranches, about 6 miles from Salinas. Fences along the county road between Salinas and Monterey for over 2 miles were in flames. With the breeze blowing strongly the flames reached the long wooden troughs used for sheep dips. These were followed by landing sheds, over 100 cords of cut wood, shearing shed, herders' huts, etc. Two dwelling houses on the Toro ranch were on fire several times and were only saved after much hard fighting. Besides fences and buildings some 45,000 acres of pastureland were totally burned over. David Jacks, one of the heaviest losers, computes his loss at over \$10,000.

FARMER'S VIOLENT DEATH.—John Jenkins, a prominent rancher of Carmel, while at Pine Canyon grade, attempted to back a heavily laden wagon at a short turn of the road. The hind wheel of the wagon went over the edge of the bank, carrying Jenkins, horses and wagon down a distance of 50 feet. He was picked up by neighbors who witnessed the accident, and it was found that both legs were broken at the knee. He died five minutes after being picked up.

ORANGE.

WALNUT GROWERS.—Anahelm Gazette: At a special meeting of the Fullerton Walnut Growers' Association, held last week, R. H. Gilman was elected president and L. P. Drake vice-president. William Berkenstock was elected director to fill the vacancy caused by the death of W. M. McFadden. A contract was entered into with the J. B. Inderrieden Co. of Chicago for the present season's crop.

RIVERSIDE.

A HORSE FEEDS ON GRASSHOPPER BRAN.—Enterprise: In trying to exterminate grasshoppers an orange grower went to town and procured a most liberal supply of arsenic, which he brought home and mixed thoroughly into a tub of bran mash, and placing the "exterminator" in the back of his buggy he drove in company with his helper out to the field. They sat the tub down on the ground and leaving the horse to wander at sweet will they filled a couple of pails with the mixture and went about their deadly work of placing it among the vines. While they were busily engaged the horse, espying the tub of bran, naturally thought a feast had been prepared for him and on the master's return had eaten every morsel of the poisoned bran. While it did not kill the poor animal, which was a valuable driver, it is doubtful if he will ever recover to be of much use again.

SACRAMENTO.

INDIANS TO PICK HOPS.—Bee: The hop growers around Sacramento have made arrangements to import into this State from Nevada a lot of Piute Indians. Many of the growers have posted notices that no Chinese or Japanese need apply for work, their intention being to supply the demand for pickers with white laborers and Indians. Prices offered for picking are from 80c to 90c per hundred.

SAN BERNARDINO.

SUGAR BEETS NOT COMING FAST.—Chino Champion: Sugar shipments from the 1902 crop of sugar beets are now coming forward daily from Chino. On Tuesday the first carload was shipped to Los Angeles and on Wednesday three carloads started for Omaha, Neb. Orders were in for some fifty carloads when the campaign opened. The campaign can not be said to be in full swing, however, as the beets are not yet coming in fast enough to operate the factory to its full capacity. About 550 tons per day have been sliced this week, using but one battery. On Sunday or Monday it is hoped to have enough beets in to start the second battery and commence slicing 800 tons per day.

SAN JOAQUIN.

FARMERS STORING HAY.—Stockton Independent: Hay is now coming into this city with a rush, the receipts having increased heavily the past few days. But little of it is being sold or shipped out, as the majority of the farmers are of the opinion that they will secure better prices for their feed later in the season. About all of the hay is being stored and will probably be held for months, as it is expected that no great change in prices will take place very soon.

SANTA BARBARA.

BIG HARVEST.—Santa Maria Times: The grain crop, taking in the entire valley and the Nipomo mesa, will exceed 500,000 sacks of wheat, barley and oats. Ten threshing machines have been at work since July 1st, and some of them as early as the middle of June. Of the 5000 acres in sugar beets, it is expected 50,000 tons of beets will be put through the mill. The bean crop is estimated at 200,000 sacks, provided, of course, the present favorable weather continues.

SANTA CLARA.

DEMAND FOR APRICOT PITS.—San Jose Mercury: At the Campbell Fruit Growers' Union about 1200 tons of apricots have been received. Some pears are coming in. Peaches are about ready for the pitters. F. R. Capp reports having secured eighteen tons from $1\frac{1}{2}$ acre of apricots. The Ernst Lushning Co. has been receiving dried apricots in large quantities. Manager Wilson states that he will buy 300 tons of apricot pits, having already secured over 100 tons. Seven dollars per ton is being paid for what several years ago was considered of no account, except for fire.

BIG CROP, SMALL RETURNS.—Gilroy Gazette: B. F. Ingels has just completed harvesting his apricots on his ranch near Hollister, the crop being the first in twelve years. Mr. Ingels thinks the apricot too fickle a crop upon which to devote any energy, and accordingly has placed four men at work to root out the trees, of which there are ten acres. The highest price offered for dried apricots in the Hollister section is only 4c, and at that figure it does not pay to grow them.

PEACHES AND PEARS GOING TO DRIERS.—San Jose Herald: The Union drier at Berryessa is finishing apricots and is beginning on peaches and pears. No great quantity of either fruit is coming in as yet, but by next week it is expected that sufficient will come in to keep 350 to 400 hands at work. By September 1st the drier will be going to the full limit of its capacity. If the quantity of fruit comes in that is now expected 600 to 800 hands will be employed. A prominent canner gives these quotations as what he would offer for the fruits the coming week: Clingstone peaches, \$18 to \$25 per ton; freestone, \$15 to \$25 per ton; pears, \$20 to \$25 per ton. The last named figures call for the very best of the various fruits. The growers believe that these figures are too low and that as the season opens the canners will either have to advance their price or else the driers will get the fruit, or at least the greater portion of it. The plum pack, green and egg varieties, which is now over, yielded to the growers from \$12 to \$20 a ton.

SONOMA.

PLACENTIA FRUIT CO.—Petaluma Courier: The Placentia Fruit Co., with groves and orchards at Placentia, in Orange county, and with offices in Petaluma, where more than half the stock is held, had its annual meeting at the office of the secretary, H. P. Brainerd, Saturday evening. The directors elected were F. H. Denman, Charles E. Hutton, H. Meyerholtz, George P. McNear and H. P. Brainerd. The affairs of the company are reported prosperous. Since January, 1890, the company has paid cash dividends amounting to nearly \$90,000.

GETTING READY FOR THE HOP HARVEST.—Sonoma County Farmer: The hop growers of Sonoma county have distributed widely a circular giving all needed information to pickers, and setting forth the advantages of a vacation spent in the hop fields. Picking will begin from September 5 to 10 and will last three weeks. Payments are made at the current rate per 100 pounds and an average day's work will yield about \$2. The price for picking has been fixed by the Sonoma Association at the customary figure of 1 cent a pound. Growers will doubtless engage Indians to assist in the work wherever there is a shortage of labor. The 12,000 bales sold have gone at an average price of 13 cents. Most of them go on a term contract of 10 cents; and as growers are averse to selling any more before the crop is in the bale, and buyers are not bidding any more, the future price is uncertain.

STANISLAUS.

LIGHTNING'S PRANKS.—Modesto News: The thunder and lightning storm of Sunday morning did some damage near Salida. The lightning struck the wire of the Grange Co.'s telephone and ran on it, completely demolishing the instrument. West of Salida a short distance it struck the fence wires and burned up a number of posts. Horses and cattle became frightened and attempted to stampede, with the result that quite a number of them were considerably cut up by the barbed wire. Charles D. Miller, who lives 6 miles from Salida, went out in the storm to get some corn under cover. He was shocked by the lightning and fell to the ground, but was able to rise, and found that he was not hurt.

SENT UP TEN YEARS FOR STEALING BAGS.—Modesto Herald: The sack stealer, Seligman, alias Moore, entered a plea of guilty in the Superior Court on Monday and a sentence to ten years' imprisonment at San Quentin was imposed. Only one of the several charges against Seligman was pressed, and that was based on the stealing of 3000 sacks from a Crow's Landing warehouse the night before he was captured, in San Joaquin

county, with the plunder in his possession. It develops that Seligman is an ex-convict, serving five years for stealing a horse and wagon in Los Angeles county. He has a wife and four children in San Francisco. There is little doubt that he has been stealing sacks and horses in the counties from San Francisco as far south as Stanislaus for years.

SUTTER.

ALMOND CROP ABOUT READY FOR HARVEST.—Sutter County Farmer: The hulls on the almonds are beginning to crack open and the crop will soon be ready for harvest. The growers report some damage being done by the crows and blackbirds, which of late years have become quite a nuisance. They light on the trees and bore into the nuts spoiling them for sale. Some of the growers will station men in the orchards with guns if the birds become too plentiful.

THE FIG CROP.—The cool weather has retarded the ripening of the fig crop, which as a general rule is about ready for harvest by the middle of August. This season it will be about ten days or two weeks later, unless warmer weather prevails. The crop in this vicinity is very good and will amount to over 100 tons from present estimates. A good portion of it has been already contracted for by Rosenberg Bros. at the same price as last season— $2\frac{1}{2}$ cents per pound.

TEHAMA.

AN ORCHARD RESTAURANT.—Red Bluff News: At one of the orchards on Thomes creek, where fruit drying is in progress, a restaurant is conducted by the Chinese who have the orchard leased and meals are supplied the pickers at actual cost of the food. A number of the pickers and cutters take their meals there. Others receive so much per day and do their own cooking.

PEACHES SLOW TO RIPEN.—Charles Cofer of Summit Ranch says he has only half a dozen hands at work in his orchard because the fruit does not ripen fast enough to employ more. He says his peaches are fully two weeks behind the fruit in the valley orchards.

VENTURA.

A FINE SHOWING.—Independent: On the Fraser farm gathering and pitting of the apricot crop closed Aug. 7th, after a nineteen days run of forty to fifty pitters, turning out an average of 400 boxes per day. The total amount pitted during the nineteen days was 185 tons of green apricots. The Frasers have one of the best arranged driers in southern California, having nine smudge rooms with hard finished walls. These rooms are 4x9 feet, and eight trucks convey nineteen or twenty trucks each from the pitting tables to smudge rooms. When through smudging they are side-tracked to the drying field and there lifted from the trucks and placed in regular order on the field to dry; when dry they are sacked and hauled to the storage room. The trays are 3x8 feet. Under the pitting shed are thirty-five to forty tables and often two pitters stand at one tray. The Frasers have thirty acres in apricot trees, 2000 in all. This farm contains 600 acres of various kinds of fruit, beans, grain and stock range, all of which is valuable land.

YOLO.

DAVISVILLE ALMONDS SOLD.—Mail: The Davisville Almond Growers' Association have sold the entire lot of almonds under its control, which includes practically all of the almonds raised in the vicinity of Davisville, to Johnson-Locke Mercantile Co. of San Francisco. The sale was consummated after bids had been received from buyers, and the highest and best bid was accepted. The following prices were obtained: Nonpareil, $11\frac{1}{2}$ c.; I. X. L., 11c.; Ne Plus Ultra, 10c.; Drake's Seedling, $8\frac{1}{2}$ c.; Golden Gate, 8c.; Peerless, $9\frac{1}{2}$ c.; Texas Prolific, $7\frac{1}{2}$ c. These prices are not quite as high as those obtained last year, but the crop is about 40% larger and the almond growers of Davisville are satisfied.

FRUIT NOTES.—Winters' Express: The Winters Dried Fruit Co. is exceedingly busy. Packing and shipping have been going on a little over a month, and the total shipments exceed twenty-five carloads, principally apricots. Dried peaches are coming in plentifully and the company is paying from 4c to 5c for them. There are fifty-three people on the pay-roll. Some of the packers are making from \$2.50 to \$3 a day, and few get less than \$1.25. The almond and prune crops in Yolo county are reported the largest ever known. Grapes have been considerably damaged here, some growers claiming to have lost 75%. Peach drying and almond hulling are keeping the fruit men busy now. Apricot pits are bringing \$6.50 a ton delivered in boxes here. They will be shipped to Suisun to run through the cracker.

THE HOME CIRCLE.

How We Worked the Road.

[Some twenty years ago.]

The garden was in and the meadows were growing.

The corn and potatoes had come through the ground, The field for the buckwheat was ready for sowing,

When Pathmaster Jones's son, Daniel, came round, Saying: "Dad sent me over to say he is goin'."

T' work roads to-morrow purvidin' it's fair.

He want's y' all out fer t' make a good showin'— So come with th' horses and men y' c'n spare."

Next morning we slept for an hour or so later

(Experience taught us a picnic was there),

Did chores, and assembled at breakfast, where pater

Divided his forces, allotted each share. "You, William," said pater, "can hitch to the scraper,

And Dick to the plow with old Dolly and Gray.

We'll work out our time on the pathmaster's paper;

The boy's and myself will each count for a day."

'Twas eight when we started, and half an hour after,

We came to a tree where we sat in the shade,

And gossiped and joked and made merry with laughter,

Till each tardy neighbor appearance had made.

Then, "Ev'ry man up!" to pick stones, plow the ditches,

And cover the roadbed with boulders and sods;

Scrape soil from low places, where black mud enriches

The stuff for a "thank e' ma'am" ev'ry few rods.

An hour thus went by, and our shade tree drew near us,

Or we to our shade tree, the pathmaster first;

Then some one proposed some hard cider to cheer us,—

For most of the party were dying of thirst.

We waited, of course, for the forthcoming bev'rage,

Smoked pipes and told stories and lay in the shade,

Then quaffed the brown liquid, and under its lev'rage

Another short stretch of a bad road was made.

Noon came, and to dinner we paid our attention,

Nor did we return ere the clock had struck two,

And all afternoon put to test our invention,

To how not to do what we came there to do.

With coming of six and our holiday ended,

Each man and each boy toward his home now made tracks;

We'd spoiled some two miles of highway, and not mended

A rod, but were pleased, for we'd worked out our tax.

—Will Templer.

The Country Doctor.

Adapted from the Russian by HERMAN BERNSTEIN.

I.

The new country physician, Dmitry Starzev, sat one day in his Turkin's drawing-room and listened first to the hostess reading aloud her own novel, and later to her daughter Catherine, who played the piano very noisily. Then the Turkins and the doctor stepped into the dining-room, where they drank tea, while the host entertained them with amusing anecdotes.

Suddenly the bell at the entrance door rang. The host and the hostess rose to receive the new visitor, and Starzev, seizing the opportunity, said to Catherine in a whisper quivering with emotion:

"For God's sake, I implore you, don't torture me. . . . Let's go into the garden. . . ."

Catherine shrugged her shoulders,

but rose nevertheless and walked out of the room.

"First you play the piano for three or four hours at a stretch," he said, following her; "then you sit close to your mother, and I can't say a word to you alone. . . . Grant me a quarter of an hour, I beseech you!"

Autumn was approaching. All was quiet and melancholy in the garden, and the alleys were covered with withered leaves. It was near sundown.

"I haven't seen you for a whole week," went on Starzev. "How I suffered during all this time! Be seated, pray, and listen." Both of them had a favorite spot in the garden—the bench beneath the old spreading maple tree. They now seated themselves upon this bench.

"Well, what is it you wish?" asked Catherine in a matter-of-fact tone. "I haven't seen you for a whole week; I haven't heard your voice so long. I am madly anxious to hear you speak."

He was bewitched by the naive expression of her eyes, and unusual simplicity which marked her bearing appealed to him strongly. Notwithstanding her naivete, she seemed to him extremely clever. With her he could speak about literature, art and life.

"I must speak to you, I must explain myself," he muttered emotionally.

She rose from the bench and looked at him as though she wanted to say something. Then, all of a sudden, she awkwardly thrust a note into his hand, rushed back into the house and seated herself by the piano.

"To-night, at eleven o'clock"—read the note—"meet me in the cemetery—near the statue of Demetti."

"Well, I call this lunacy," he thought, when he came to himself at last. "What has the cemetery to do with all this?"

He felt certain that she was not in earnest, that she was jesting. For what sane person would think of making an appointment in the cemetery at night, since it was so convenient to meet in some public park? And, besides, how unbecoming it was for so solid and sensible a man as Dr. Starzev to sigh, and receive love letters, and go to the cemetery to meet his beloved! What would be the result of this love affair? What would his colleagues say if they had learned of it?

Thus thought Starzev as he walked about in the clubrooms excitedly; but at half-past ten he called his coachman, Panteleimon, and ordered him to drive to the cemetery. It was quite warm for an autumn night. The moon was shining and the dogs were barking in the distance. Starzev alighted on one of the deserted streets and started off towards the cemetery on foot.

"Every person has his own peculiarities," thought he. "Catherine is a rather peculiar girl—and who knows? Perhaps she was in earnest—and she may come after all."

He walked about half a mile through the field. All was hushed in deathlike silence. The stars twinkled meekly and mournfully in the sky, and Starzev's heavy footfalls sounded rather strange and out of place.

Nobody was near the statue of Demetti. But Starzev came to a halt and waited. He sat near the statue for some time, then he rose to his feet and, walking through the alleys, holding his hat in his hand, he thought of the numerous beautiful and fascinating women buried in the graves about him. Starzev felt like crying out that his soul was now thirsting for love at any cost—and soon the marble stones somehow seemed to assume the forms of living beings, modestly hiding in the shade of the trees.

Suddenly the moon disappeared behind clouds, all was plunged into darkness. Starzev worked hard to find the way out, and when he reached his carriage it was about two o'clock in the morning.

II.

On the next day Starzev directed his steps to the Turkins to propose to Catherine. But this proved impossible, as she was in her room dressing her hair. She was preparing to go to a ball.

Starzev had to wait long in the dining-room and listen to her father's

jokes and anecdotes, which bored and irritated him painfully. After a sleepless night, he now felt as though intoxicated with something sweet and pleasant. He waited for Catherine with bated breath. Finally, when she appeared charming and graceful, in her evening dress, Starzev was so overjoyed that he could not utter a word—he only gazed at her and laughed. "It is so late already!" she remarked, looking at the clock, and she bade him "good night." But Starzev followed her, saying that it was time for him to go home, as patients were waiting for him there. "The club is on my way—may I take you over there in my carriage?" he asked timidly.

"Very well," consented Catherine. It was a dreary, rainy night. Catherine and the doctor boarded the carriage and started off to the club.

"I was at the cemetery last night," began Starzev. "It wasn't at all kind of you to—"

"Were you really there?"

"Of course I was there, and waited till two o'clock in the morning—I suffered—"

"It serves you right—you may suffer if you can't understand a joke."

Satisfied that she played such a fine trick on the doctor, and that she was loved so passionately, Catherine burst into laughter, and suddenly screamed with fright as the horses made a sharp turn into the gates of the club. When Catherine leaned slightly toward Starzev, he clasped his arms around her waist and kissed her on the lips and on the chin, and then held her in a firmer grasp.

"Enough!" said Catherine dryly.

A moment later she was out of the carriage. Starzev hurried home, but returned within half an hour. Dressed in a hired frock-coat and a white tie which was forever getting the best of his collar, he sat in the club at midnight and spoke to Catherine with all the fiery passion he could muster. "Oh, how little they know who never loved! It seems to me that no one has ever properly described love—it is indeed impossible to describe that gentle, joyous, sweet, yet often painful feeling, but he who has experienced it will not venture to describe it. But what is the use of superfluous eloquence! My love is limitless. I beg, I implore you," he exclaimed, "be my wife!"

"Mr. Starzev," said Catherine, after a brief pause, a very serious expression on her face—"Mr. Starzev, I am very thankful to you for the honor; I respect you, but—" She rose, and resumed, standing, "but you must pardon me, I cannot be your wife. Let us speak seriously. Mr. Starzev, you know that I love art above all else in life; I love, I adore music, I have devoted all my life to it. I want to be an artist; I want fame, triumphs, and you would like me to live in this provincial town, to continue this empty, useless life which has become unbearable to me. To be your wife—oh, no, I beg your pardon! One should always strive to attain the highest and most brilliant goal, while married life would only bind me forever. Mr. Starzev, you are a kind, noble, sensible man, you are better than any one I know—" Tears gathered in her eyes. "I sympathize with you, but you understand me; I cannot." And in order not to burst into tears, she turned and walked away from him.

Starzev's heart was beating fast. On leaving the club he first of all tore off and flung the cravat which was choking him. He felt ashamed because his self-respect had thus been humiliated; he did not expect rejection, and he could not believe that all his dreams and torments and hopes led up to so ridiculous an ending. And he was so sorry for his wasted love that he felt like crying.

For three days he could do nothing—he could not eat or sleep—but when he learned that Catherine had gone to Moscow to study music, he calmed down and his life flowed on peacefully.

III.

Four years went by. Starzev was by this time a very popular physician, with a large practice in the city.

One beautiful summer morning he re-

ceived a letter from the Turkins, in which he was requested to call without fail in the evening. There was a postscript in the note which read: "I also invite you to come, Catherine."

In the evening Starzev went up to their house.

"You never come to see me, doctor," said the hostess with a reproachful smile. "Of course, I am too old to interest you, but my daughter may be more fortunate. She has just returned from Moscow."

Though Catherine had grown thinner and paler, she still looked beautiful and graceful. But the doctor noticed that the former expression of childish innocence was no more. There was something timid and guilty about her manners, as though she felt herself out of place here in her own home.

"How do you do?" she said shaking his hand and regarding him steadfastly and eagerly. "How stout you have grown, how manly! But on the whole you seem to have changed but little."

Starzev was silent. Somehow the pallor and the expression of her face, the faint smile, and her voice—all these did not appeal to him now, and soon he found fault with the dress she wore, with the very arm-chair in which she was seated. He recalled his love for her—the dreams and hopes which stirred his soul four years ago—and he felt ashamed of himself.

They drank tea with sweet cakes. Then the hostess read aloud a story of her own, after which Catherine played the piano as noisily as ever.

"It is a good thing that I didn't marry her," thought Starzev.

Catherine ceased playing and looked at him, evidently waiting that he should ask her to go with him to the garden, but he kept silent.

"Let us speak," said she, advancing towards him. "Tell me, how are you getting along? I have been thinking of you all these days," she went on nervously. "I was going to write you. I have waited for you so impatiently to-day. For God's sake, come into the garden."

They walked out in the garden and seated themselves on the bench beneath the maple tree. It was a dark night.

"Well, tell me, how are you getting along?" asked Catherine.

"As usual," replied Starzev.

And he could not think of anything else to say. They sat in silence for a while.

"I am nervous," said Catherine, covering her face with her hands, "but don't pay any attention to that. I feel so good at home; I am so glad to see everybody here. How many happy recollections. It seemed to me that we would keep on speaking here all night long, until day break."

She now gazed at him with naive curiosity as though she wanted to scrutinize, the better to comprehend the man who once loved her so tenderly and passionately, and her eyes seemed to thank him for that love.

At this time Starzev recalled how he roamed about the cemetery and how he escorted her to the club on the next day, and he felt sorry for the past. A new light was kindled in his soul.

"Do you remember the evening I took you to the club?" he asked. "It was raining, dark."

He was growing enthusiastic, he wanted to unburden himself, to complain of life in general.

"Eh," said he, with a sigh. "You ask me how I am getting along. I am getting older, stouter, weaker. Life passes gloomily, without leaving any impressions, without inspiring any thoughts. The days are devoted to money making, and the evenings spent in the club amid gamblers and alcoholics whom I detest from the depth of my heart. What good is there in such a life as this?"

"But you work—your noble aim in life. You were always so fond of speaking about your hospital. I was then a queer girl. I imagined myself a great pianist. Now I know that my piano playing and my mother's novel writing are of a kind. I did not understand you then, but later, in Moscow, I often thought of you. I thought of you alone. What happiness it is to be a country doctor, to be able to help suffering

humanity, to serve the people! What happiness!" repeated Catherine enthusiastically. "When I thought of you in Moscow, you seemed to me so ideal, so sublime."

Starzev thought of the money he so eagerly counted every evening on his return from the patients, and the fire in his soul died out.

He rose, ready to leave. Catherine took him by the arm.

"You are the best of all men I ever knew in my life," she continued. "Call again. We must meet, we must speak to each other. I am not a pianist, I am perfectly clear on this point; I'll never play again in your presence—I'll never speak to you about music."

When Starzev entered the house and saw her agitated face by lamplight, and her sad, grateful, searching eyes, which were fixed on him, he became restless.

"It is a good thing I didn't marry her at that time"—this thought again flashed through his mind.

Starzev bade her "good-by," and departed.

Three days later a messenger brought him a note from Catherine.

"You did not come to see us. Why?" she wrote. "The very thought that you have changed makes me shudder. Come, reassure me by telling me that everything is right. I must speak to you about some important matter. Your Catherine."

"Tell her," said the doctor to the messenger—"tell her that I cannot come to-day. I am very busy. Tell her that I'll come about three days later."

Three days passed, a whole week went by, and Starzev did not call on Catherine. In fact, he never visited the Turkins again.

The Providential Cat.

The story of how a celebrated painter was saved from suicide and led to fortune has been told by a contributor to "Our Dumb Animals." She says:

In the atelier of a certain French painter there seems to be a congress of yellow cats, or rather the same cat in portraits innumerable.

Eight years ago Maurice Lenoir dwelt in a garret, earning his bread by copying pictures, nourishing his soul with dreams of a great classic canvas of his own. Needless to recount the disillusion, privations, rebuffs, or the nervous reactions of the days when he received a few francs. The unrelieved pressure of poverty, the unremitting blows of ill luck—tap, tap, like a paver's mallet—became unbearable. The thin blood of semi-starvation mounted to his head, creating visions of suicide.

One evening he bought poison. Re-entering his room something brushed past his feet. He lighted a candle and began to write a few lines, merely to save trouble at the inquest. Suddenly there sprang upon the table a little yellow kitten. It rubbed caressingly against his face. Evidently a waif—one of the surplus ninefold lives of nobody's cat. It was thin and famished.

"One may be tired of life," said Maurice, "but one does not leave a guest hungry!"

With bread and milk, all he had, he fed the kitten, then warmed it within the breast of his coat, where it caressed with its tongue the hand that held it, then purred itself to sleep.

Maurice reflected: "Suicide is the refuge of one who has no longer hopes, ties of affection or responsibilities. In receiving this kitten I have assumed a duty. To place this little creature for warmth upon my heart and then turn that warmth to ice would be a betrayal. At least I will live until to-morrow."

In the morning the little cat appeared so pretty, Maurice painted and was able to sell its portrait. Another was ordered, and another.

M. Lenoir's pussies became the fashion. He deferred his dream of a classic canvas and painted only cats in all postures and colors—yellow, black, white, gray and tabby. He studied cats; he divined under their mask of drowsiness or caprice the subtle charm

and wisdom adored in old Egypt.

The yellow kitten that saved his life also made his fortune. And M. Lenoir proved not ungrateful; the yellow cat, now patriarch of a tribe, has his cushion and his cup in the atelier, and wears a golden collar inscribed "To my benefactor."

Fainting.

It is a curious fact, of general remark, and observed not by physicians only, that fainting is less common than it used to be. It is rare that one sees a woman carried out of church or the theater, yet forty years ago it was a matter of such common occurrence as barely to excite remark. This is due in very great measure to the outdoor life young women lead in these days of tennis and golf and other sports. The heart and the circulation are strengthened by exercise in the open air, and it takes a greater shock to disorder the blood balance in the body of the modern woman than it did in that of her grandmother.

The habit of fainting is not so much a sign of weak heart as it is of an excitable circulation. It is caused by anæmia of the brain resulting from a dilatation of the blood vessels of the body and the consequent flow into them of the entire mass of blood. This absence of blood from the brain arrests the action of the heart and produces loss of consciousness. It is probable that the heart does not stop beating entirely, but acts so feebly that no pulse can be felt.

Alarming as a fainting spell may be, it is very seldom, indeed, when the heart is not actually diseased, that a person dies in one. Women are more liable to faint than men, but there are few even of the latter who have not at some time during their lives experienced at least a faint feeling, if not an actual loss of consciousness.

In the case of a fainting fit, the first thing to do is to lay the person flat on the back, if possible, with the head lower than the feet, and then to loosen all the clothing. Vigorous fanning and sprinkling the face with cold water will help to equalize the circulation. Burning a feather under the nose is sometimes of service. Smelling-salts may also be used, but ammonia water is inadvisable, for the person may suddenly take a deep breath and inhale a powerful dose of the pungent gas. Brandy and all other alcoholic stimulants will do more harm than good.

Persons who are subject to fainting spells should avoid hot rooms and hot baths, stimulants of all kinds—strong tea and coffee as well as alcohol—and food of an indigestible nature.—Youth's Companion.

He Never Spoke Again.

The following story is told of a ventriloquist, now famous, but at the time of this happening so hard up he used to walk between the cities where he was to appear. On one of these tours he came to Philadelphia on foot, and on the road he picked up a miserable little dog "because it looked so much like he felt." The story will explain what became of the dog.

The first house he came to was a saloon, and of course he wanted a drink. He had no money, but went in anyhow to see what he could do. The proprietor, a German, said:

"Well, what will you have?"

He said, "I'll take a little whisky," and then turning to the dog, he asked:

"What will you have?"

The answer came very promptly:

"I'll take a ham sandwich."

The German was so surprised he almost fainted. He looked at the dog a moment and then asked:

"What did you say?"

The dog replied:

"I said a ham sandwich."

Hans thought it wonderful that a dog should be able to talk, and asked who had trained him, how long it had taken, etc., and wound up with:

"How much you take for him?"

"Oh," said Mr. Ventriloquist, "I wouldn't sell him at any price, but I am a little hard up now, and if you will

lend me \$50 I'll leave him with you until I bring back the money."

"All right," said Hans. "I just want him for a little while, so I can show him to some smart people I know around here."

So everything was settled, the money paid, etc., and as the ventriloquist went out he turned and waved his hand to the dog and said:

"Well, good-by, Jack. I'll come back soon."

The dog looked at him and said:

"You mean son of a gun, to sell me for \$50 after all I've done for you! So help me Moses, I'll never speak another word so long as I live!"

And he didn't.—Philadelphia Times.

Testing Food Values.

In some ways the most important feature of the work done by the Department of Agriculture in determining the value of foods for human consumption has been the devising of the respiration calorimeter by Professor Atwater and Professor Rosa, of Wesleyan. It is a copper chamber seven feet long, four feet wide, six feet four inches high, in which a man is placed and in which he stays for a period of from five to eight days. He is given opportunity for exercise, unless it is to be a rest test, and he lives, so far as possible, precisely as he would live in the outside world. The object is to determine what proportion of the food he eats is accepted by the body for use, what part is rejected. By means of the calorimeter apparatus—the heat measuring apparatus conveys the thought perhaps clearer—it is possible to tell precisely how much energy or heat is developed by the man while in the cage. Every unit, or particle, of heat is measured as it passes out of the chamber, and so absolutely accurate is the apparatus that he may not rise from his chair without the extra energy thus generated being recorded. Every particle of food eaten is measured and tested with the utmost exactitude, and every particle of waste is registered with absolute accuracy in order that the precise amount of material may be determined. These results are daily being applied in the feeding of the army and navy of the United States.—From "The New Agriculture," by W. S. Harwood, in Scribner's.

"ARE you in pain, my little man?" asked the kind old gentleman.

"No," answered the boy, "the pain's in me."

DOMESTIC ECONOMY.

Domestic Hints.

TOMATO BEEF.—Sprinkle small pieces of beef cut from the remains of a roast, with salt, pepper and flour. Put a layer of meat in a baking dish, over it put a layer of canned tomatoes or sliced fresh tomatoes. Scatter bits of butter over it. Cover with a layer of beef, then tomato. Make the top layer of buttered crumbs. Bake slowly for one hour.

FRIED SWEETBREADS.—Parboil and when cold dip them in beaten egg and cracker crumbs, sprinkle salt over them and fry in hot fat. Take one tablespoonful of this fat, and then stir into it one tablespoonful of flour, then set the pan back a little and add gradually one cupful of milk, stir until smooth. Season with salt and pepper, a little very finely chopped celery and cook about two minutes. Pour over the sweetbreads.

CREAMED FISH.—Pick cold cooked fish to pieces and remove all the bones. Make a cream sauce with two tablespoonfuls each of butter and flour, two cups of milk and a dash of cayenne and one-half a teaspoonful of salt. Butter a pudding dish, put in a layer of fish, a layer of sauce, and continue until the dish is full. Spread crumbs and bits of butter on top, and bake twenty minutes in a hot oven.

DELICIOUS LITTLE CUCUMBER PICKLES.—These are always crisp and spicy, and not too acid to be good. Take

seventy-five small cucumbers and wash long and very fresh, and wash and wipe them. Put them in a crock and cover with a brine strong enough to bear up an egg; leave over night. The next morning wipe each one and place in glass jars. Measure in one jar how much vinegar it will take to cover the pickles, and take enough for all; put this in a porcelain kettle and add one slice of onion, a dozen whole cloves, an ounce of mustard seed, a cupful of grated horseradish and four blades of mace. Let it come to the point where it steams but does not boil, and then pour it over the pickles and cover. After three weeks they will be ready for use. A very pleasant change from this is to put in half the jars a teaspoonful of dill seeds and a couple of bay leaves, which will give quite a different flavor from the other spices alone.

Hints to Housekeepers.

Silk stockings, it should be remembered, must never be washed with soap. Warm water, to which bran is added in the proportion of two tablespoonfuls to a pint, is what is needed. Do not wring, but squeeze out after rinsing them and dry in the shade.

For people who would paint the lily an ingenious device has appeared which adds to the glow of the flame. This latest invention, in the form of a powder, if sprinkled on wood logs in open fireplaces, is warranted to cause the blaze to assume iridescent hues and glittering colors.

To make chicken broth nicely, take an old chicken, clean it thoroughly, cut it in rather small pieces, and put it in a deep saucepan covered with water; let it boil slowly for four or five hours, renewing the water, if necessary. Then strain and set it aside over night; it ought to be formed into a thick jelly in the morning, and will keep for days. A little rice or barley, boiled very soft, added to the chicken broth, makes a nice variety.

The proper garnish for a consomme soup in summer is a royal paste. To make a garnish sufficient for a quart of consomme, take three egg yolks, one whole egg, an even saltspoonful of nutmeg, a saltspoonful of salt and a scant saltspoonful of cayenne pepper. Beat the seasoning into the eggs and add half a cup of cream. Strain the whole through a hair-sieve and turn into three buttered timbale moulds. Set the moulds in the oven in a pan of water reaching to half their height. Cover them so that the paste will not brown, and let it harden in the oven for fifteen minutes. Then take the paste out of the moulds, cut it in thin slices with a sharp knife, and add the slices to the hot consomme. Add a drop of French coloring fluid of spinach green to one mould of the paste before cooking it; add a drop of carmine to another and leave the third uncolored. The soup will then be decorated with the different colored slices and will present a most attractive appearance.

With many of us it is a domestic tragedy when the best tablecloth ends an honored existence. Of course, in the hands of a thrifty housekeeper, this is not until its spotless surface has been adorned with sundry bits of embroidery, and even then, if rightly managed, it has years of existence before it is in other spheres. Hold such a cloth up to the light, so that the thin places may be readily seen, and let some one with a blue pencil mark around them; then lay it on the floor or a large table, and cut from the better part an infinity of small doilies of various sizes, 4, 6, 8 and 10 inches square; oblong napkins, also of different sizes, cutting your coat always according to your cloth. Roll these up and lay them in the "fifteen minutes basket," and when you find an idle moment on your hands, fringe them. The result will be a store of doilies, which you will at once find so useful that you will wonder how you ever kept house without them. If the linen has been both heavy and fine, and of a handsome design, they are besides decidedly ornamental.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Aug. 20, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	69 1/2 @ 70 1/4	68 3/4 @ 67 3/4
Thursday.....	70 1/4 @ 69 3/4	67 3/4 @ 66 3/4
Friday.....	70 1/4 @ 71 1/4	67 3/4 @ 68
Saturday.....	70 1/4 @ 69 3/4	67 3/4 @ 66 3/4
Monday.....	70 1/4 @ 69	67 3/4 @ 66 3/4
Tuesday.....	69 3/4 @ 70 1/4	66 3/4 @ 67 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	33 @ 31 1/2	28 3/4 @ 29 1/4
Thursday.....	32 3/4 @ 30 3/4	29 1/4 @ 28 3/4
Friday.....	31 3/4 @ 33	29 1/4 @ 29 3/4
Saturday.....	32 3/4 @ 31 1/2	29 1/4 @ 28 3/4
Monday.....	32 3/4 @ 31 1/2	29 1/4 @ 28 3/4
Tuesday.....	32 3/4 @ 33 1/4	28 3/4 @ 29 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 13 1/4 @ 1 13	\$1 15 @ 1 15 1/4
Friday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ —
Saturday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ —
Monday.....	1 12 1/4 @ 1 12 1/4	1 15 1/4 @ 1 15
Tuesday.....	1 12 1/4 @ 1 13 1/4	1 15 1/4 @ 1 15 1/4
Wednesday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ —

WHEAT.

In the speculative market for wheat much the same see-saw business has been experienced as for some weeks preceding. The manipulators pretend to suddenly discover that wheat is already too high; that the crop is likely to be larger than can be disposed of; that the cooks have combined to boycott wheat and compel their vast constituency to chew something else than bread for awhile. Down go wheat futures several points and only the foxy short is happy of the crowd taking a turn at Fortune's Wheel in the wheat pits. It would be more appropriate to term it Misfortune's Wheel, with the emphasis on the Miss, even at the expense of giving the machine a feminine designation. But why not? Did not Shakespeare say, "Hell hath no fury like a woman —." The grain gambling machines were not in operation, however, in Shakespeare's time. But to come back to the see-saw. It will not do to have options tumbling all the time. The manipulators cast another horoscope and they discover very bad weather in Argentina, Timbuctoo, and other places on the map; the rain is reported coming down on the unprotected grain and not enough umbrellas in the whole region to do any good. Up goes wheat several points on the Call Board, or gets back to where it had been several days previous. In much the above fashion is speculative wheat jiggered up and down on paper. In other words, it is up when the victims are buying and down when they are selling. But values for spot wheat do not necessarily bob up and down with the speculative market. Offerings of actual wheat are not lacking for custom at the going rates, and while operators would not hesitate to depress prices while buying the actual grain, they are not at present meeting with any noteworthy success in that direction.

California Milling..... 1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside..... 1 12 1/4 @ 1 15
Oregon Valley..... — @ —
Washington Blue Stem..... — @ —
Washington Club..... — @ —
Off qualities wheat..... 1 07 1/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	6s 1d @ 6s 1 1/4d	6s 4d @ 6s 5d
Freight rates.....	37 1/4 @ 40s	24 @ 26 1/4s
Local market.....	95 @ 98 1/2	1 12 1/4 @ 1 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.12 1/2 @ 1.13 1/2.
May, 1903, delivery, \$1.15 @ 1.15 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13 1/2 @ 1.13 1/2; May, 1903, \$1.15 1/2 @ —.

FLOUR.

Prices are ruling steady, and being on a low plane as compared with wheat values, are not likely to be soon more favorable to the consuming interest. It is the common thing, however, to have cutting competition on flour in all the wholesale centers, and the exception where it sells in a general way at full figures justified by cost of production. There is a very liberal ex-

port movement at present, both to Asia and South America, and business on local account is of fair average proportions.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

The market is ruling firm for all descriptions of barley, but more particularly for desirable export grades. Round lots of the latter are being eagerly sought after for immediate shipment to Europe. More barley has been cleared lately from this port than wheat, and the total shipments of barley since July 1st are close in volume to the aggregate of wheat exports for the season to date. There is every indication that there will be a continued liberal movement outward for several months to come, especially if the grain can be secured at or near prevailing values in sufficient quantity to admit of promptly dispatching cargoes. Prices throughout are quotably on a little higher plane than at any previous date the current season.

Feed, No. 1 to choice.....	95 @ 97 1/2
Feed, fair to good.....	92 1/2 @ 95
Brewing, No. 1 to choice new.....	98 1/2 @ 1 02 1/2
Chevalier, No. 1 to choice.....	1 15 @ 1 25
Chevalier, common to fair.....	1 00 @ 1 10

OATS.

The market for this cereal has developed no radical changes since date of last review, but as a whole shows slightly improved condition, more in sympathy with barley than in consequence of any particular improvement in the demand or special advance in the bids of buyers. Oats are now relatively the lowest priced feed grain on the market.

White Oats, fancy feed.....	1 25 @ —
White, good to choice.....	1 20 @ 1 22 1/2
White, poor to fair.....	1 07 1/4 @ 1 15
Gray, common to choice.....	1 10 @ 1 17 1/2
Milling.....	1 25 @ 1 30
Surprise, good to choice.....	1 17 1/2 @ 1 25
Black Russian.....	95 @ 1 05
Red.....	1 00 @ 1 15

CORN.

Business in corn continues of a light order; in fact, could not well be otherwise, with present limited stocks and high cost of same. Offerings are principally Large Yellow. Values for Large White are largely nominal, in the absence of any noteworthy supplies of this variety.

Large White, good to choice.....	1 50 @ 1 60
Large Yellow.....	1 37 1/4 @ 1 42 1/2
Small Yellow.....	1 42 1/4 @ 1 47 1/2

RYE.

Not much arriving, and on local account there is no special inquiry at present. Values are without noteworthy change.

Good to choice.....	85 @ 90
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BUCKWHEAT.

The same inactivity previously noted. There is a lack of both offerings and demand.

Good to choice.....	1 55 @ 1 70
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BEANS.

There are no large spot stocks of any description. Supplies now in this center are mainly Large Whites, with the bulk of these in very few hands. The bean crop in the East promises to be light, and that should aid the local market materially, particularly for white varieties, which are most sought after on Eastern account, but with new season near at hand there is naturally effort being made on the part of prominent operators to prevent any special display of buoyancy. Current values on colored beans are being well maintained. The market throughout shows exceedingly healthy condition.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 60 @ 2 75
Lady Washington.....	2 40 @ 2 80
Pinks.....	2 15 @ 2 50
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 75 @ 3 90
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Only Green Dried are being offered in quotable quantities, and these are not being sought after in a wholesale way. The spot supply of Niles Peas is exceedingly slim, and bids fair to continue until new crop comes upon the market.

Green Peas, California.....	1 50 @ 1 75
Niles Peas.....	— @ —

WOOL.

Beyond some sorting, packing and scouring of previous purchases, and making some shipments of the same Eastward, both by sea and rail, there is nothing of consequence to note in the local market. There is at present very little wool offering from first hands, most of the Spring

clip having been placed and not much Fall clip having yet come forward. There is a firm tone to the market and no trouble in securing custom at going rates for all wools showing fair to choice condition.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

The market has a more quiet air than for some time past. Dealers are not rushing around trying to purchase new hops to arrive at 24 @ 28c per lb., or even at materially lower figures. In fact, there is no disposition shown to contract at present. Some dealers might be induced to let go some of their present holdings, under contracts, at the extreme prices they have been lately quoting. Obtainable values for new to arrive are at present too poorly defined to warrant quotations. Hops of last crop are in very light stock and are quotable in a jobbing way at 21 @ 26c. The following is a New York review: "The market continues to present a very dull appearance here; very little doing with dealers, while brewers are showing scarcely any interest, still complaining of a comparatively small output of beer, owing to the generally cool weather prevailing most of the season so far. We notice a parcel of 1901 hops sold here to a dealer at 25c and another lot in the interior at 24c, both small lots, but the prices realized are the highest since 1891. The State crop is improving a little. There has been some talk of blight in some sections, but the so-called blight is probably only a red rust on the vines, the natural result of the hot sun on the water-soaked vines, and it is not hurting the hops a particle. The fruiting appears to be heavier than usual, which offsets the smallness of the vines. It now looks as if the State crop would easily reach 35,000 bales, and probably 40,000 bales. Advices from Continental Europe continue very favorable for a large and excellent crop, conservative estimates placing the yield in Germany and Austria fully 150,000 cwt., larger than last year. German hops have been offered to brewers here this week by German dealers at 35c. England is still complaining, and it now looks as if they would not raise 400,000 cwt. In fact, England is the only weak spot as regards crop reports."

HAY AND STRAW.

The hay market has continued to present an easy tone, with offerings of much the same liberal volume as for some weeks past, and considerably ahead of immediate requirements. There is no quotable change to record in values, but if selling pressure were exerted, full current figures could not be realized. Much of the hay coming forward represents purchases made in the interior by city dealers, which accounts to a great extent for the existing steadiness.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	6 00 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 1/2 bale.....	35 @ 45

MILLSTUFFS.

In the market for Bran and other mill offal there have been no appreciable changes in values since last review, but receipts and offerings were lighter than preceding week, causing the market to show a generally firmer tone. Rolled Barley inclined against buyers. Milled Corn ruled steady.

Bran, 1/2 ton.....	19 00 @ 20 00
Middlings.....	22 50 @ 24 50
Shorts, Oregon.....	20 00 @ 22 00
Barley, Rolled.....	20 50 @ 21 50
Cornmeal.....	31 00 @ 32 00
Cracked Corn.....	31 50 @ 32 50

SEEDS.

There are no new developments in the market for the several kinds of seeds quoted herewith. They are mostly in too light supply to admit of other than small jobbing operations. Quotable values remain practically as last noted.

	Per ctn.
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 25 @ 3 25
	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Business in this line is of light volume at present, and invariably is at this time of year. In Fruit Sacks there is a fair movement, but with this exception there is no noteworthy trading. Values are without radical change.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/4
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/2, 7
Fruit Sacks, Jute.....	7 @ 7 1/2

HIDES, PELTS AND TALLOW.

There is no improvement to note in the condition of the market for Wet Salted Hides and Pelts. Most of the tanneries in this vicinity have shut down on account of a strike, and stocks of Wet Hides are accumulating. Dry Hides are ruling fairly steady, with a moderate movement outward. Tallow is in request at full current figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	@ 3 00
Salted Horse Hides, medium.....	2 25 @ —	@ 2 50
Salted Horse Hides, small.....	1 50 @ —	@ 2 00
Dry Horse Hides, large.....	1 75 @ —	@ —
Dry Horse Hides, medium.....	1 50 @ —	@ —
Dry Horse Hides, small.....	1 25 @ —	@ —
Dry Colts' Hides.....	50 @ —	@ —
Pelts, long wool, 1/2 skin.....	80 @ —	@ 1 00
Pelts, medium, 1/2 skin.....	50 @ —	@ 75
Pelts, short wool, 1/2 skin.....	30 @ —	@ 40
Pelts, shearing, 1/2 skin.....	15 @ —	@ 30
Deer Skins, best summer.....	35 @ —	@ —
Deer Skins, good medium.....	— @ —	@ 30
Deer Skins, thin winter.....	— @ —	@ 20
Elk Hides.....	10 @ —	@ 12
Tallow, good quality.....	5 1/4 @ —	@ 6
Tallow, No. 2.....	4 1/4 @ —	@ 5
Goat Skins, perfect.....	30 @ —	@ 37 1/2
Goat Skins, small.....	10 @ —	@ 20
Kid Skins.....	5 @ —	@ 10

HONEY.

Not much offering or arriving of any sort. While the market is firm throughout, current values are being better sustained on Comb than on Extracted, for the reason that the latter has to depend to some extent on outside demand. All the Comb honey offering will be required locally. The shipment of Comb honey has never proven satisfactory, and the production is in consequence restricted to small compass.

Extracted, White Liquid.....	5 1/4 @ 5 1/4
Extracted, Light Amber.....	5 @ 5 1/4
Extracted, Amber.....	4 1/2 @ —
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESWAX.

Stocks are small and are bound to so continue throughout the current season. Market is firm at the figures quoted.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Market for Beef and Mutton ruled more quiet than during preceding week, but offerings were not especially heavy and previously quoted values were well sustained. Veal and Lamb were in very moderate receipt and sales were in the main at full current figures. Tendency on Hogs was in favor of the buying interest, mainly due to weaker markets East, but there were no pronounced declines.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 6 1/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 1/2 lb.....	8 @ 9 1/4
Veal, large, 1/2 lb.....	7 @ 8 1/4
Lamb, spring, 1/2 lb.....	9 @ 9 1/4

POULTRY.

Anticipating an extraordinary demand for poultry, large quantities of both East-

ern and domestic were rushed in here the past week. Especially were Young Chickens in heavy stock. The demand did not come up to expectations and a considerable portion of the poultry received had to be carried over, causing a weak, irregular and generally unsatisfactory market. There is every prospect that there will be a change for the better at an early day, likely the coming week.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, choice young.....	18 @ 20
Turkeys, alive, Hens, # lb.....	14 @ 15
Turkeys, alive, Gobblers, # lb.....	14 @ 15
Hens, California, # dozen.....	3 50 @ 5 00
Roosters, old.....	4 00 @ 5 00
Roosters, young (full-grown).....	4 00 @ 5 00
Fryers.....	3 00 @ 3 50
Broilers, large.....	2 50 @ 3 00
Broilers, small to medium.....	1 50 @ 2 25
Ducks, old, # dozen.....	2 50 @ 3 00
Ducks, young, # dozen.....	2 50 @ 4 50
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 50 @ 1 75
Pigeons, old, # dozen.....	1 50 @ 1 75
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Market is lightly stocked with choice to select fresh, but there is a superabundance of fresh which will not rank as A1 and is unsuited for the best trade. Market is firm for the finest, but weak for the other grades. Buyers are not giving much attention to common qualities of fresh, taking cold storage stock instead.

Creamery, extras, # lb.....	26 @ —
Creamery, firsts.....	24 @ 25
Dairy, select.....	24 @ 25
Dairy, firsts.....	23 @ 23
Dairy seconds.....	19 @ 21
Mixed store.....	17 @ 19

CHEESE.

The same firm tone previously noted is prevailing, with stocks only moderate and demand fair. Values for cheese are now relatively higher than for butter. The difference in price between domestic and Eastern is much smaller than ordinarily.

California, fancy flat, new.....	12 @ —
California, good to choice.....	11 @ 11½
California, fair to good.....	— @ —
California, "Young Americas".....	11½ @ 12½

EGGS.

For strictly select fresh, uniformly white, large and in every way desirable, the market was moderately firm, with sales in a small way up to 30c. per dozen, this figure including delivery to any part of the city. For other grades of fresh the market could not be termed particularly favorable to sellers, as the more common qualities had to come into competition with Eastern and cold storage eggs. Eastern were in moderate receipt and there were liberal offerings of local cold storage stock.

California, select, large, white and fresh.....	20 @ —
California, select, irregular color & size.....	24 @ 28
California, good to choice store.....	20 @ 23

VEGETABLES.

Most kinds of vegetables now in season were in good supply, and the market as a whole favored the buying interest. Changes in quotable values were not very pronounced, but such as did occur were mainly to easier figures than had been ruling. Onions ruled fairly steady, in the absence of any special selling pressure, but the movement in them was not very brisk, either outward or on local account. Shipments to Australia are not proving as heavy as anticipated. Tomatoes sold at a wider range than lately current, with market moderately firm at the higher figures for choice to select stock.

Beans, Lima, # lb.....	3 @ 3½
Beans, String, # lb.....	1½ @ 2½
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @ —
Corn, Green, Alameda, # crate.....	1 00 @ 1 25
Corn, Green, # sack.....	50 @ 75
Cucumbers, # large box.....	30 @ 50
Egg Plant, # large box.....	30 @ 65
Garlic, # lb.....	1½ @ 2
Onions, Yellow Danver, # cental.....	45 @ 60
Okra, Green, # box.....	50 @ 75
Peas, Sweet garden, # lb.....	2½ @ 3
Peppers, Green Chile, # box.....	30 @ 60
Peppers, Bell, # box.....	30 @ 60
Summer Squash, Bay, # large box.....	30 @ 50
Tomatoes, River, # large box.....	50 @ 75

POTATOES.

There was a little more business transacted in the potato market than for a week or two preceding, but prices were without appreciable improvement, continuing at a low range. Several carloads were forwarded from here to Texas, but Kansas and Colorado are shipping to same section and have the advantage of lower freight rates than can be obtained from here. Business on local account was of only moderate volume. Sweet Potatoes were in fair receipt, mainly from Stockton and Merced.

Burbanks, Saltinas, # cental.....	45 @ 1 00
River Burbanks, good to select, # cental.....	30 @ 60
Early Rose.....	30 @ 40
Garnet Chille.....	50 @ 60
Sweet Potatoes, # cental.....	2 00 @ 3 00

The Fruit Market.

FRESH FRUITS.

The market for fresh deciduous fruits, as also for Grapes and Berries, continued in the main quite favorable to the buying and consuming interest, although as a whole the market showed slightly improved condition over that of preceding week. There was a fair shipping demand, mainly from the North, and principally for Bartlett Pears, Peaches, Plums and Grapes, but only stock in first-class condition and showing good keeping qualities could be turned in on shipping orders. For fruit desirable for shipment the market was moderately firm at the top quotations, and where the fruit was wrapped a moderate advance was realized, about sufficient to cover the extra cost. Apples were in liberal stock, some of the leading depots being crowded with this fruit, and only for strictly choice to select could prevailing values be said to be well maintained. Bartlett Pears of high grade were quotable up to 80c for wrapped stock, but common qualities dragged at low figures, some No. 2's failing to attract wholesale custom at 25c per regular 40-lb. box. Peaches were quite plentiful, and offerings included some of very superior quality. For the best, in regular 20-lb. boxes, 50c was a quotable extreme. In bulk, \$15 per ton was about the utmost obtainable for choice Freestones in a wholesale way, and for Clings \$20 per ton was a quotable extreme in the wholesale market. Plums were probably never more plentiful or cheaper. There was very little wholesale or canning demand for them at any price. They had to be of superior quality and of select varieties to command 50c per 20-lb box, ordinary selling at low and irregular figures. Grapes showed increased receipt and generally better quality, but prices did not improve. Figs remained in light supply and market was rather firm for choice. Melons of all descriptions were in ample stock for current needs and values were at a low range. Berries were not in heavy supply, but it was the exception where they brought what could be termed stiff prices.

Apples, # fancy, 4-tier box.....	85 @ 1 00
Apples, good to choice, # 50-lb. box.....	60 @ 75
Apples, common to fair, # 50-lb. box.....	30 @ 50
Apricots, Royal, # crate.....	— @ —
Cantaloupes, # crate.....	50 @ 1 00
Crabapples, # small box.....	25 @ 40
Blackberries, # chest.....	2 0 @ 4 00
Raspberries, # chest.....	8 00 @ 10 00
Figs, 1-layer box, 30 @ 50c; 2-layer.....	65 @ 1 00
Grapes, Fontainbleu, # crate.....	25 @ 50
Grapes, Muscat, # crate.....	50 @ 85
Grapes, Rose Peru, # crate.....	50 @ 75
Grapes, Seedless, # crate.....	60 @ 90
Grapes, Tokay, # crate.....	60 @ 85
Grapes, Zinfandel, # box.....	35 @ 50
Nectarines, Red, # box.....	25 @ 60
Nectarines, White, # box.....	25 @ 50
Nutmeg Melons, # crate.....	25 @ 50
Peaches, # box.....	20 @ 50
Peaches, # basket.....	15 @ 35
Peaches, Cling, in bulk, # ton.....	15 00 @ 20 00
Peaches, Freestone, in bulk, # ton.....	10 00 @ 15 00
Pears, Bartlett, No. 1, 40-lb box.....	40 @ 70
Pears, common, # box.....	25 @ 35
Pears, No. 1 Bartlett, # ton.....	10 00 @ —
Plums, choice large, # box or crate.....	30 @ 50
Plums, # ton.....	8 00 @ 12 00
Plums, small, # box.....	15 @ 30
Prunes, Tragedy, # crate.....	25 @ 40
Strawberries, Longworth, # chest.....	9 00 @ 10 00
Strawberries, Melinda, # chest.....	3 00 @ 6 00
Watermelons, # doz.....	75 @ 2 50
Whortleberries, # lb.....	4 @ 6

DRIED FRUITS.

There is a very quiet air in the market for cured and evaporated fruits. Dealers claim they have made provision for all early deliveries and are not in a hurry about stocking up heavily against future needs. Indications are that producers will have to carry a considerable portion of the season's output into the fall and winter months. Any heavy selling pressure at this date would certainly necessitate accepting lower prices than have been yet established. In quotable values there are no marked changes to record from the figures of preceding week, but there is an absence of firmness and sales are not readily effected at full current rates. Quotations are based on values prevailing for round lots or carload offerings. There are some minor transfers being made direct from producers to small handlers at slightly higher figures, but such form no basis for regular wholesale quotations. The movement at present is mainly in Apricots, although supplies of Apples are on the increase, and Peaches and Plums are beginning to arrive in noteworthy quantity. Royal Apricots of superior quality are obtainable at 6½c., and only very select Moorpark's warrant quoting up to 8c. Evaporated Apples in boxes are going mainly at 6½@7c., with dealers talking half a cent to a cent lower for deliveries thirty to sixty days hence. Large handlers are quoting Peaches at 4½@4¾c. for good to choice in carload lots, but many producers are refusing absolutely to negotiate on this basis of values. There is

no evidence of any special movement in Prunes, buyers and sellers being apart in their views. Some Santa Claras are said to be offering for forward delivery at 2½c. for the four sizes, ¼c. premium for large; other Prunes are quoted on the 2¼c. basis, ¼c. premium for 40-50s.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	6½ @ 7
Apricots, Moorpark.....	6½ @ 8
Apricots, Royal, good to choice, # lb.....	5 @ 6
Apricots, Royal, fancy.....	6½ @ 7
Nectarines, # lb.....	— @ —
Peaches, unpeeled, choice.....	4½ @ 5
Peaches, peeled, in boxes.....	— @ —
Plums, Red and Black, pitted.....	5 @ 6
Plums, White and Yellow.....	5 @ 6

COMMON SUN-DRIED.

Apples, sliced.....	4 @ —
Apples, quartered.....	3½ @ —
Figs, Black, in sacks, # lb.....	2½ @ 3
Peaches, unpeeled.....	— @ —
Pears, prime halves.....	— @ —
Plums, unpitted, # lb.....	1½ @ 2½

RAISINS.

There is a moderate movement in last year's raisins at generally unchanged values, trading being principally in Loose Muscatels at 5½@6c, as to grade. In futures there are no evidences of anything doing. Efforts continue to be made to perfect a combination of packers and growers before this year's yield comes upon the market.

CITRUS FRUITS.

Two carloads of late Valencia Oranges were landed here Monday and were sold within range of \$3.50@4.25 per box, as to quality. Lemon market is not quotably higher, but shows a firmer tone, with demand very good the past week, especially for best qualities. Limes were in reduced supply and active request, and prices were marked up \$1 per case.

Oranges, Late Valencia, # box.....	3 50 @ 4 25
Lemons—California, select, # box.....	3 00 @ —
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Limes—Mexican, # box.....	5 00 @ 5 50

NUTS.

Market shows much the same condition as last noted. Almonds are firm at the recent advance, and some growers are holding out for still higher figures. The prices for new Walnuts are expected to be fixed in several weeks. The crop in this State promises to be larger than last year and of good quality. Peanut market is firm at ruling rates, with no heavy offerings of either domestic or Eastern.

California Almonds, shelled.....	16 @ 20
California Almonds, paper shell, # lb.....	11 @ 12
California Almonds, soft shell.....	8 @ 10
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	11 @ 12
Cal. White Walnuts, No. 2 soft shell.....	9 @ 10
Cal. White Walnuts, No. 1 hard shell.....	9 @ 10
Cal. White Walnuts, No. 2 hard shell.....	7 @ 8
Peanuts, California, fair to prime.....	4½ @ 5½
Peanuts, Eastern, hand-picked.....	6 @ 6½

WINE.

The market continues quiet, as is expected at this time of year. Dry wines of last year remain quotable at 20@25c. per gallon, wholesale, but these figures are largely nominal in the absence at present of any noteworthy offerings from first hands. Wine grapes of current crop are quoted at \$20@25 per ton for northern California dry wine stock, and \$12@16 for southern grapes for sweet wines, the lower figure being for second crop Muscat. Shipments by sea from this port in July were 280,150 gallons and 525 cases, with a total valuation of \$102,000. In corresponding month of last year the total clearances by sea from San Francisco were 197,950 gallons and 635 cases, total value \$68,100.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	121,559	743,160
Wheat, centals.....	106,514	567,720
Barley, centals.....	110,737	650,465
Oats, centals.....	21,925	86,918
Corn, centals.....	179	6,975
Rye, centals.....	—	39,604
Beans, sacks.....	5,784	24,514
Potatoes, sacks.....	33,455	155,189
Onions, sacks.....	8,953	26,097
Hay, tons.....	5,157	30,162
Wool, bales.....	908	8,010
Hops, bales.....	—	31

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	107,668	490,080
Wheat, centals.....	84,789	453,189
Barley, centals.....	78,856	360,375
Oats, centals.....	487	6,189
Corn, centals.....	168	4,802
Beans, sacks.....	193	2,253
Hay, bales.....	3,534	16,710
Wool, pounds.....	68,696	153,853
Hops, pounds.....	227	2,897
Honey, cases.....	2	57
Potatoes, pack's.....	2,207	9,850

California Dried Fruit at New York.

NEW YORK, Aug. 20.—Evaporated apples, common, 8@10c; prime wire tray, 10½@10¾c; choice, 11@11¼c; fancy, 11½@12c.

California Dried Fruits.—Buyers operating slowly, anticipating heavier offerings in near future. Prunes, 3½@7c. Apricots, boxed, 7@9¼c; bags, 6½@7¼c. Peaches, unpeeled, 9@10c; peeled, 12@16c.



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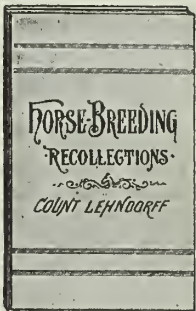
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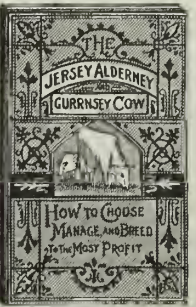
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FRUIT PRESERVATION.

Fig Curing.

Fig sulphuring, according to Henry Markarian, of Fresno, in a local paper, is no longer necessary to a very great extent. In fact, it works a positive injury to the fruit, and should be done away with as far as possible. Eastern people who patronize the fig market say that the California fig has a peculiar flavor, and is not to be compared in sweetness to the imported figs. This flavor, Mr. Markarian says, is due entirely to the sulphuring.

LIGHTENS THE COLOR.—The sulphuring has been done to change the color of the figs. The Adriatic figs, comprising the bulk of the entire California crop, are darker than the Smyrna fig, and people in buying invariably pick out the light figs. So they have been sulphured to get them to the proper color. But the sulphuring takes out a large quantity of the sugar, and robs the fig of its natural flavor. Mr. Markarian says the sulphuring, if continued long enough, will take every bit of sugar out of the figs. Complaints have been made from the East very frequently. Last year Mr. Markarian concluded to make experiment. He had a few of the growers deliver their crops unsulphured, and the figs were packed this way and sent East. The result was that they sold fully as readily as before and gave far better satisfaction.

COLOR NOT IMPORTANT.—Color is not as important an adjunct to the Adriatic fig as it was formerly. For a long time the figs were packed in bulk in boxes and the retailers in putting them on exhibition, of course, desired the light-colored figs. But now the figs are packed in small bricks, wrapped in paper, and the color does not make any difference to the retailer, who sells them out a brick at a time. Moreover, the figs are out into the market in competition with those from the Mediterranean countries, where sulphuring is sometimes necessary, as the fruit does not color uniformly. But an hour's sulphuring is all that is required even here. So this year Mr. Markarian has notified the growers not to sulphur their figs. He believes that the unsulphured article will soon convince the Easterners that there is not a peculiar, disagreeable flavor to the California fig, and that there will be a much greater demand for them than before.

THIS YEAR'S CROP.—Speaking of the fig crop this year, Mr. Markarian said recently that the prospects are for the finest and largest crop ever produced in the county. The trees are heavily loaded, and the figs are of much finer quality than is generally the case. This is due to the comparatively cool weather that has prevailed for the greater part of the summer, giving the fruit a chance to ripen slowly and de-

velop a large amount of sugar. In his estimation the crop will be the largest ever raised here by forty or fifty carloads. This will depend greatly, of course, upon the price. If the growers can secure a good price for their figs they will take care of their entire crop; but if the price is low a good many earloads will be left untended to on the trees.

THE SMYRNA FIG.—"We will not pack any Smyrna figs," Mr. Markarian said lately in answer to the question. "There are very few orchards in the county old enough yet to yield any kind of crop. However, I expect a few next year, and the year afterward there will be enough perhaps to make the Smyrna something of a figure in our packing business. So far, Mr. Roeding is the only grower who has bearing trees of the Smyrna in large numbers, and I believe that he has started a movement that will revolutionize the fig industry in California. I know that the packers can dispose of 2000 cars of Smyrna figs with more ease than they can 200 cars of the Adriatic. Up to within the last year or two, Easterners have condemned the California fig for its inferiority. They point to the small seeds as a sure sign that the fig is not up to a very high standard. But the Smyrna fig has large seeds and is in every way a beautiful fig, and since they have been shipped East from here the buyers have commenced to change their opinions regarding the California fig. There is a greater demand for figs from this coast every year. I believe that the Smyrna fig grown in California is superior for sweetness and flavor to the fruit really grown in Smyrna."

Why the Canneries Are Not Doing More this Year.

Mr. J. B. Stewart of Chico resents the statement that the shutting down of canneries in the Sacramento valley is due to the "combine," and offers through the Chico Enterprise the following explanation of the behavior which has brought such disappointment and losses to the growers in several localities. He says:

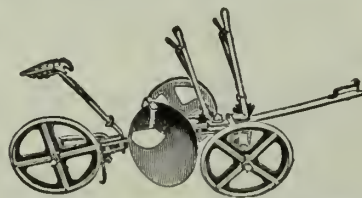
The Red Bluff cannery is not in the "combine," nor is the Woodland cannery, which is running on half time; nor are a dozen others I could mention. This lack of activity at a season of the year when we are naturally expected to be busy is not due to any scarcity of fruit. There is any quantity of fruit. Nor is it due to the fruit not ripening, for there is any quantity of ripe fruit, but it is due to lack of demand, present and prospective, for the cheaper grades of fruit. High grade California canned peaches will always sell at a profit, that is, goods which can be packed from peaches running 2½ inches in diameter and over in size, but low grade goods will only sell at a profit when there is a failure of the crop in the East. The reasons for this are that Eastern fruit being small runs almost entirely to low grades, that labor and materials are much cheaper in the East and that we are handicapped by a freight rate that amounts to more than one-half the entire cost of packing. Whenever there is a crop of fruit in the East, therefore, the canners take advantage of these conditions and pack more than enough of the cheaper grades to supply the market. If there were a crop each year there would be no possibility of selling the East any California low grade goods at all, and as 50% of the best peaches go into low grade goods, our canning business really depends on the failure of the Eastern crop, which usually occurs every second or third year. For the East to have three full crops in succession is almost unprecedented, but that condition exists now. Figuring on a failure this year, canners generally, but more especially those not in the "combine," packed heavily last season on low grade goods. Now they have these on hand, while they find that all the trade will take is high grade stock which the East cannot fur-

nish. Consequently they went into the season with the intention of packing as few low grade goods as possible. The late season and cool weather led us to suppose that the early peaches would size up and give us some good stock, but it is very disappointing in both size and quality. In fact it is simply impossible to get fruit to run on which will not make 75% of low grade goods, and it is due to this and to nothing else that the canneries are idle. We who have been intimately connected with the business for many years can recall times when the same conditions have prevailed, before any "combine" was thought of, but we can also recall that we, as private canners, in an endeavor to get even, forced the price of green fruit down below the cost of production, and paid for it when we pleased. We understand that private canners are doing the same thing now, but all the fruit the California Fruit Canners' Association is using was bought on five-year contracts at a price highly acceptable to the grower and fully 25% above prevailing prices, and it is paid for on delivery.

Mr. Stewart adds that the Chico cannery will run to its full capacity as soon as good fruit can be obtained to run it, which will be in about a week.

ONE SILENT CANNERY.—Red Bluff Sentinel: James Feeley has been advertising extensively for help and expected to open the cannery to-morrow, but on Saturday decided not to run. It is believed that he is negotiating to enter one of the four combines.

Poisonous snakes are happily few in this country, but stinging bugs are many. Take Perry Davis' Painkiller with you on your vacation and use it free when bitten by noxious insects. Directions on every bottle.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING JULY 29, 1902.
705,811.—INSULATOR—J. S. Allen, Los Angeles, Cal.
705,806.—FEED TROUGH—J. W. Barnes, Beaverton, Or.
705,558.—HOPPLE—H. A. Bostwick, Spokane, Wash.
705,738.—RIFLE—J. H. Carl, Gilroy, Cal.
705,814.—ROTARY ENGINE—J. E. Cary, S. F.
705,741.—CRUTCH—W. F. Drew, Sacramento, Cal.
705,664.—BICYCLE—F. Gooch, Shelburne, Or.
705,933.—TRAP FLUSH—J. E. Key, S. F.
705,787.—FRUIT DRIER—J. E. Kurtz, Salem, Or.
705,937.—SOLDERING MACHINE—J. Lee, S. F.
705,778.—CONVEYER—W. L. McCabe, Seattle, Wash.
705,776.—GAME BOARD—E. E. Morrill, S. F.
705,784.—DREDGER CUTTER—R. A. Perry, Oakland, Cal.
705,887.—CURRENT MOTOR—J. Roeb, Oroville, Wash.
FOR THE WEEK ENDING AUGUST 5, 1902.
706,145.—BEET TOPPER—J. Alhright, Watsonville, Cal.
706,005.—AWNINGS—W. H. Arnold, Oakland, Cal.
706,016.—DENTAL FLASK—Brewer & Harvey, Watsonville, Cal.
706,306.—WELL BORER—C. Ehrenfeld, Pasadena, Cal.
706,169.—TELEPHONE MOUTHPIECE—English & Burns, S. F.
706,176.—HORN STAND—F. C. Hassett, Kelsey, Wash.
706,178.—BED COUCH—J. Hoey, S. F.
706,182.—FIRE PLACE—R. N. Johnson, Bremerton, Wash.
706,323.—MAIL BAG CATCHER—G. B. & J. C. Klink, Tacoma, Wash.
706,344.—MOP HEAD—J. C. Look, Tudor, Cal.
706,432.—VALVE—F. H. Mason, Spokane, Wash.
706,341.—OIL BURNER—Pfeiffer & Staples, S. F.
706,458.—MORTISING MACHINE—C. J. Seaquest, Silver Lake, Wash.
706,498.—FABRIC—J. E. Seeley, Los Angeles, Cal.
706,137.—HOOP CLAMP—J. Weigel, S. F.

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ENTOMOLOGICAL.

Horn Flies.

To THE EDITOR:—It seems to me it would be the greatest service you could do for many of your readers to teach some good effective way to keep the flies off cattle, and if possible to kill the flies with some kind of spray. If you don't know of something you can tell us at once. There ought to be a number of articles each week by different ones until something effective is learned. It is something awful what the poor cattle suffer and the loss of milk to the State is enormous. I paid \$2 for a gallon of fly killer and a sprayer with it. And I believe it would kill and keep them away if enough of the stuff could be made to go through the sprayer. It goes on in a mist that is so fine it is hard to be seen, and is not effective. The stuff I use has the smell of fine tar, taste of kerosene, and the appearance of crude oil, and ought not to cost much. Should we learn that cheap oils are the thing we should need to be told how to mix or emulsify them. Seeing I could not get a sufficient amount of the fly killer I took some crude oil (petroleum) and water and after long stirring I found I could not mix it. I thought of putting it on with a brush if it would mix. H. E. DYE.
Visalia.

We have in previous years given the facts about this insect and stated that it is exceedingly difficult to contend with. A fresh statement, which we find in Hoard's Dairyman, is timely:

The Texas, or horn fly, as entomologists tell us, produces two or three broods during the season, so that we have to be constantly working against them to prevent their injuries. Dairy-men need not be told that this pest is about one-third as big as the ordinary cattle fly that bites our cattle about the legs. Its bite seems to be as irritating to cattle as the bite of a mosquito is to some people. The mosquito does not trouble some people, while others of a nervous temperament are driven almost crazy by it. So with cattle, and the best milkers are of this highly strung, nervous temperament; but, to get good results, the cattle must be kept placid and comfortable, and nothing that shall cause irritation, fright or worry, should, if at all possible, be permitted to affect the dairy cow of all the cattle tribe.

The life history of this horn fly appears to be confused, by many people, with that of the maggot that gets into the heads of sheep. That fly lays an egg in the nose of the sheep; the egg is hatched and the grubs crawl up into the brain. It was first supposed that the horn fly laid its eggs on the horn and that the grub ate its way into the horn and thence to the brain. This, however, is not so. The only injury is that the insect gives the cattle no rest, so that the cattle injure themselves by rubbing until sores form. Some people assumingly assert that they saw holes in the horn. This is mistaken assurance. What seemed holes on the horn was simply the excrement of the fly. The maggot could not bore into the horn.

The fly can be prevented from doing injury by simply rubbing the animals with grease or any pungent oleaginous substance. They settle on the horn because it is difficult for the animal to drive them off; the object of the fly is to find a place where it cannot be reached and can bite at its leisure; but it will not settle on a well oiled spot. The usual method of oiling or spraying is not, however, a logical method of treating them, since if you drive them from one animal they settle on another. But knowing the life history of the in-

sect we can take more rational methods of extermination.

The eggs are laid on the fresh, wet dung, as soon as it is dropped. In less than twenty-four hours the eggs are hatched into grubs; then pass into the third stage, in which most insects do not move; then there is the fourth stage, the perfect insect. The maggots live in the dung and, in about a week, before the dung has dried up, the insect has passed through all its stages and the perfect fly comes forth.

The rational method of abating the ravages of the fly is, clearly, to produce a condition in the dung so that it is not a place in which those insects can live. This can be done by either disturbing the dung, or by placing upon it some substance to dry it up. A remedy, to meet the popular demands, must be simple, cheap and effective. A brush harrow seems to be that remedy. It is composed of large pieces of brush fastened so as to drag behind a roller. Such a brush dragged rapidly over a pasture, twice a week, is all that would be necessary to render the dung unfit for insect growth.

As to the fly repellants, their number are legion, and most of them advertised as both cheap, and handy to apply with the sprayer that usually goes with them. The commercial repellants need to be applied night and morning, at times when flies are most persistent, but for much of the time in "fly season," it answers to apply once a day.

One may mix up a fairly satisfactory lotion at home, but the chances are it will not be as cheap or effective as the purchased article. I may say, however, that if not convenient to purchase any of the repellants of commerce, if one has a hand sprayer he can fill it from his kerosene can, and has at short notice a satisfactory repellant. But if one must use kerosene, there is no necessity of using it so strong. The kerosene emulsion would be very much cheaper—would not cost much over 1½ cent a gallon. But the difficulty in making the emulsion is the churning process. The stock emulsion, used one to nine, will be found effective in repelling the flies if applied often enough.

Helps Out the Hero.

In the old days, when a certain Texas city was not the charming place it is now, I was playing in "Monte Cristo" to a crowded house. All afternoon the cowboy of his type of the day had been coming into town for the performance. I could see him well in evidence in the front row of the balcony, his skin jacket shining and his pistols glistening in his belt. The arch villain was facing his fate in the final act, and I spoke my lines, "Your time has come." Suddenly a cowboy stood up in the front row and drew a bead on the villain of the piece. "If you don't fix him," rang out his voice, "I will!"

There he stood ready to put the threat into execution.

"Kill me quick! Kill me quick!" cried my fellow-actor under his breath, trembling at the prospect of a more realistic end from the gentleman in the balcony. But the joke was too good a one for that. I prolonged the duel as much as possible, but presently the arch villain took his first plausible opportunity to expire at my feet.

"That's right; served him right! If you hadn't done it, I would!" came approvingly from the voice in the balcony.

But that circumstance lessened my chances to get any one to play the part later. Actors would come to me for an engagement in the villain's role and ask, "Are you going to play in Texas next year, Mr. O'Neill?"

"Yes."

"Thank you."

That would be the end of it, for each would say, "Good-day!" — James O'Neill in Saturday Evening Post.

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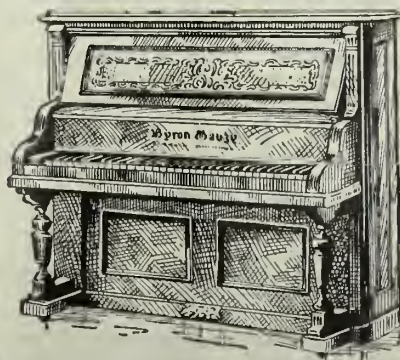
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THE VETERINARIAN.

The Tuberculosis Problem.

After many years of striving for information, says the Orange Judd Farmer, the matter of bovine tuberculosis is still undecided. That the danger from the disease was greatly exaggerated we have always contended. The latest contribution on this subject is a book on tuberculosis in cattle by Prof. Behring of Germany, in which he details the results of six years' investigations at Marburg, where he was assisted by Drs. Ruppel and Roemer. From advance sheets it is seen that Prof. Behring affirms that tuberculosis in man and cattle is propagated by identical bacilli, and the seeming differences between the human and the cattle bacilli result from the capacity of the bacilli to accommodate themselves to the organism in which they live. He says he has discovered a method to render cattle immune against tuberculosis, which is done by vaccinating the cattle when they are young. This he declares to be his greatest discovery, and says the method is in use on farms at Marburg.

Last summer, Prof. Koch, the original discoverer of the tubercle bacillus, made two somewhat surprising claims. The first was that the bacillus which produced bovine tuberculosis and that which caused human tuberculosis are different from each other. The second is that this disease in cattle is so different from the similar disease in man that it is very rarely transmitted from animal to man. The danger to man from the use of milk and flesh of tuberculous animals is therefore extremely slight.

These two claims are quite at variance with the belief common among scientific men the last few years, as is pointed out by Prof. H. W. Conn of the Connecticut Experiment Station in Bulletin No. 23. He notes that these claims were received with much opposition and a large amount of discussion and experimentation followed. The scientific world seems to have settled down to about the following conclusions: The first claim of Prof. Koch that there is a difference between the bacilli producing the disease in animals and those producing it in man is generally admitted to be substantiated. The main difference seems to be that the bacillus of tuberculosis in man does not so readily produce tuberculosis in cattle, and is therefore with cattle apparently less virulent than the bacillus of bovine tuberculosis. It is not quite settled that this difference is anything more than a slight variation in variety, the same species of bacillus assumes when growing in two different localities. The majority, however, appear to believe that the difference is not very great and not sufficient to warrant a conclusion that they are different species.

The second claim that tuberculosis can not be transmitted from cattle to man is emphatically denied. A number of cases have been brought to light during the last few months, where the evidence of direct transmission from animal to man is so strong as to be hardly questionable. Most bacteriologists now are positive in their assertions that the disease is communicable from animal to man.

The suggestion advanced by Prof. Koch, and the evidence brought out by previous and subsequent discussion, renders it quite plain that the flesh and milk of tuberculous animals are not to be looked upon as common sources of human tuberculosis. So far as adults are concerned, the disease in man is rarely derived from cattle, but young children feeding upon cows' milk are frequently affected with tuberculosis from this source.

This conclusion, instead of being fortunate for dairying, is in one respect unfortunate. As long as the dairy farmer was forced to believe the tuberculous cattle were likely to distribute tuberculosis, he was inclined to keep his herd free from the disease. Furthermore, the belief that tuberculosis is not transmissible may result in greater

carelessness on the part of the dairyman in treatment of his herds. Both these facts are extremely unfortunate. However, it is now more evident that the disease is readily transmissible from one animal to another, and the presence of a tuberculous cow in a herd is a positive danger to the dairymen and to the dairy interest. What is necessary now is to inform the farmers regarding the actual condition of herds.

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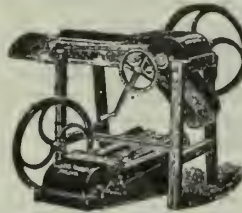
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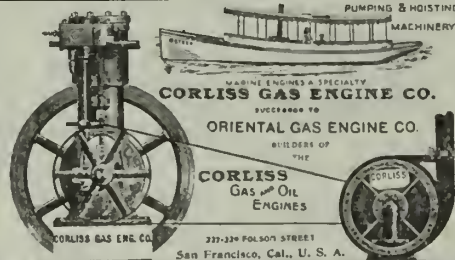
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A DAIRY EDUCATOR.—The San Joaquin Ice Co. creamery people show their patrons, and all others who wish to know, how to test their milk for butter fat, and how to figure up their accounts for it. Would there were more who did so.

DEVELOPING ISLANDS.—Great are the "islands" of the San Joaquin river and its many sloughs; and great is the agricultural development of them now going on. The faith of the pioneers of years ago in that direction is being amply realized and justified.

RECLAMATION EFFECTS.—G. W. Knight, of Knightsen, Contra Costa county, who is interested in Sherman island and the levying of it, thinks the reclamation of other islands farther up by confining the water of the Sacramento river to a narrower channel has the effect to raise the level of it in flood times, and so make necessary a higher levee on Sherman island than it formerly had and the maintenance of the levee more difficult.

KLONDIKE ALMOND.—A new variety of almond tree which he calls the "Klondike" has been grown for some years by G. W. Knight, of Knightsen. It has about the same size and appearance as the Nonpareil—a shade less in every particular, perhaps. The chief peculiarities of it are the erectness of the limbs, the evenness with which the nuts are distributed over the trees, and the large proportion growing on the bodies of the main limbs. It seems to be a healthy sort of variety, and a steady bearer of good crops, and is well thought of by other growers than its propagator in its home neighborhood. The stock of 1000 trees for this year in this line is all spoken for. Mr. Knight's family orchard of ten acres at Knightsen station is evidence that the sediment and sand land of that vicinity, adjacent to the tule islands, is valuable for growing abundant crops of delicious fruit without irrigation, standing water being within a few feet of the surface.

PUBLIC OWNERSHIP.—Stanislaus county, with Modesto as its center, and numerous growing little towns around it, possesses one of the grandest features of the State in the way of development by irrigation—land which owns the water necessary to make it most productive—and the men necessary to put this fact effectively before the people. In one place at least public ownership of water is proving a success.

PACKING HOUSE MATTERS.—The Earl Fruit Co. packed 150 cars of green fruit at Visalia this season. It will add 20 feet to the length of its orange packing house at Lindsay and put in another Rayburn grader.

At San Jose, Ralph W. Hersey, with D. D. Brooks in company it is understood, has rented the old building of the San Jose Fruit Packing Co. at San Jose, and will pack all kinds of fruit. The building is 120x120 feet, brick, two stories, and will be well supplied with power and packing machinery.

H. E. Lossee has added a third story and a new office to his plant.

The J. K. Armsby Co. has built a large addition to its warehouse, and the Rucker-Cassab drier has been enlarged. The facilities of the Geo. N. Herbert, Scott & Braun and D. D. Brooks packing houses have also been increased.

The A. & C. Ham Co., who also operate in fruit, have added two large buildings to their plant.

The new Dunlap Co., fruit operators at Gilroy, have a three-story building well equipped with machinery.

It is understood that Madison & Barber, Fresno, will pack on the Bonner ranch.

ONE SEASON'S WORK.—At H. F. Geer's, near Turlock, a small amount of irrigation for alfalfa, for one season, raised the water level in his well 7 feet, and it is now within 8 feet of the land

surface.

FROST PREVENTION.—Messrs. R. J. Nutting, Andy D. Ferguson, A. Voglesang of Fresno and Harry Postlethwaite of San Jose have organized themselves into a corporation, the California Frost Preventive Co., to manufacture and put on the market hereafter the Froude crude oil pot, in connection with which the Bolton electric frost alarm was so successfully used in some cases last year, the right of manufacturing the oil pots on royalty to be withdrawn.

RISE OF ARMENIA.—It is one of the noteworthy features of the development of the San Joaquin valley at present that the Armenian population, who look at land as the basis of a business and foundation of a family, rather than as a thing to speculate in, are steadily acquiring the best vineyards and orchards in the country, especially in Fresno county, generally of medium sizes rather than the small ones, and are eliminating the population which uses land as a thing to speculate in.

GRASSHOPPERS AND REAL ESTATE.—Some real estate dealers of Fresno say that, for the time at least, more damage was done to them this summer by the news about grasshoppers in the papers than was done to the farmers by the grasshoppers in the fields. For six weeks in some offices sales almost stopped.

Short Practical Course in Agriculture and Horticulture.

A ten-weeks' course for practical farmers who wish to learn about the best modern methods, and then return to the ranch to apply them, has just been announced by the University of California at Berkeley. This short course in agriculture and horticulture will extend from Tuesday, Oct. 7th, to Thursday, Dec. 18th. A short course in dairying is offered for the same ten weeks.

The short course is open without examination to anyone seventeen years of age or over, provided only that the applicant should have sufficient schooling to profit by instruction. As accommodations are limited, the number of students will have to be restricted, those experienced in farm work being given the preference.

No charge will be made for tuition, and only for those students who wish laboratory work in butter and cheese making will there be any laboratory fee. The students' only expense will be for board and lodging, which may be obtained in private houses in Berkeley for from \$18 to \$30 a month, and for books and class room material.

Lectures on agricultural topics, work in the laboratories and reading in the library will constitute the tasks of the short course. All the resources of the University equipment will be at the disposal of the students.

Prof. Hilgard, head of the Department of Agriculture, will lecture on the nature, classification and treatment of California soils. Prof. Wickson will discuss the growth of grasses and forage plants in California, the adaptability of various species to different regions and the methods necessary for their successful culture. Prof. Shaw will give instruction in sugar beet culture and in the rational use of fertilizers—the different kinds of plant food needed for various California conditions. Mr. Stubenrauch will describe the best hothouse and nursery practice. Prof. Woodworth will lecture on the insects which affect the fruit interests of California, and teach how to collect, preserve and identify insects, and how to use a microscope in their study. Prof. Wickson will lecture on California horticulture, discussing the commercial products of fruits, vegetables and flowers, their varied requirements, culture methods, and promise as lines of investment. Mr. E. H. Twight will give instruction in grape growing.

In animal industry, there will be lectures by Professor Leroy Anderson on milk and its products, breeds and breeding, and the feeding of farm animals; by Professor Shaw on dairy chemistry; by Dr. Ward on dairy bacteriology, the anatomy and physiology

of domestic animals, and the diseases to which they are subject, with special attention to the methods of prevention and control of tuberculosis, Texas fever, anthrax, hog cholera, and other important ailments of farm stock.

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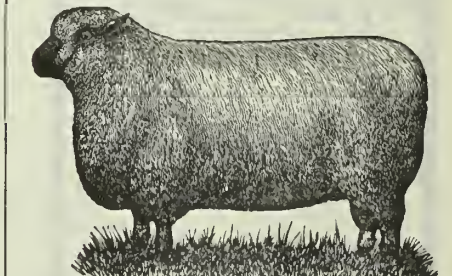
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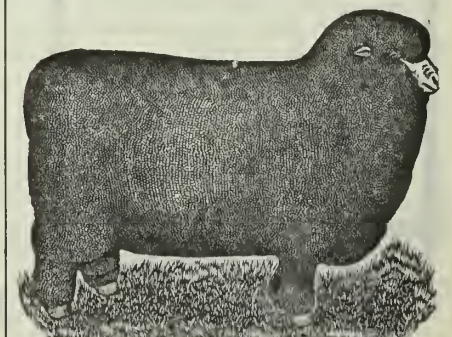
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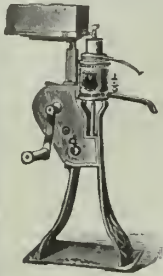
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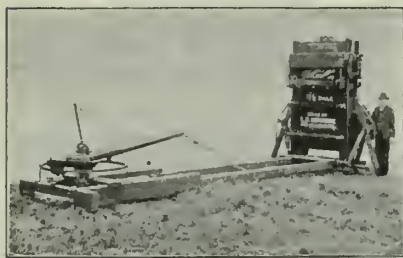
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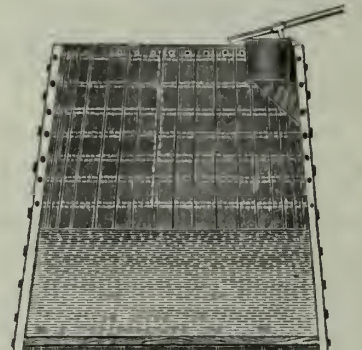
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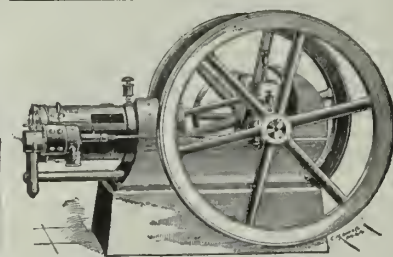
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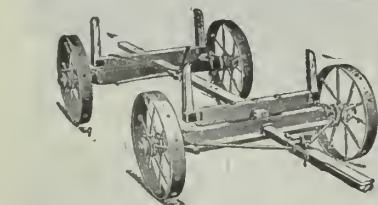
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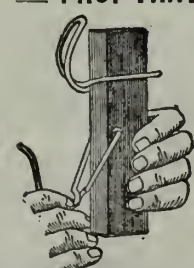
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A CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 9.

SAN FRANCISCO, SATURDAY, AUGUST 30, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Restraining the Debris.

The joint effort of State and nation to save agricultural lands and navigable rivers from ruin by the deposit of mining debris is approaching a practical test. The undertaking has an interesting history. In 1893 California appropriated \$250,000 to build restraining barriers against further advancement of debris in the Sacramento valley, contingent upon the Federal appropriation of a like amount. This was secured in 1896. In 1901 a further joint appropriation of \$300,000 was secured, thus making \$800,000 available for the work. The whole enterprise is under the direction of the members of the U. S. engineer corps that constitute the California Debris Commission.

Since the first half-million-dollar appropriation was made, there has been considerable preliminary prospecting, calculating, selecting, boring and estimating. The Commission reached the conclusion that a site locally known as the Narrows, in the vicinity of Smartsville, Yuba county, Cal., would be a suitable one for the proposed work; an extended series of investigations and surveys were then made under the direction of Assistant Engineer Hubert Vischer, determining the depth of the tailings in the bed of the river, the configuration and character of the bedrock, and, in general, all the existing conditions. The engravings, Figs. 1, 2 and 3, show the nature of the work. Fig. 3 shows a special device made for that work; in boring therewith pebbles 3 inches in circumference were brought up from a depth of 80 feet by the suction process of the boring machine. The test borings showed a depth of from 50 to 85 feet of gravel.

The preliminary work was completed in September, 1898, and about that time it became the settled opinion of the engineers that a further and larger project on much more extensive lines would be required to insure the largest measure of ultimate success. Much time has been consumed in making arrangements and in securing 2000 acres of land that the Commission held to be necessary for the work. Matters have, however, now so far progressed as to make it possible that the actual work may be started Oct. 15. The first of the series of dams, which will cost \$35,000, is to be situated about midway between Brown's Valley and Smartsville, 16 miles east from Marysville. Other dams will be constructed from

time to time as the Government deems best. The appropriations, aggregating \$800,000, are expected to provide for the storage of mining debris within the bed of the Yuba river by a system of works designed to separate the coarse material from the fine, and also to provide for narrower and well defined limits in order to preserve in place the extensive deposits in the river below. The scheme, as reported by Hubert Vischer, is to erect several barriers across the river bed, the upper ones to be located about 3 miles east from the mouth of Dry creek; another to be located just below the mouth of Dry creek as a flood overflow barrier; another to be

placed at Daguerre Point; also to form a settling basin about 3 miles in length and half a mile in width on the south side of the river. This settling basin will consist of a levee, protected from the wash, to be built in the bed of the river, with its upper and lower ends connecting with the existing levee and shore on the south bank. The end walls are to have inlet and outlet weirs and conduits to regulate the inflow and outflow of the river and to cause the finer material carried in suspension to be deposited and held in the settling basin, through which, at all but flood stages, the river will be compelled to flow. Below the settling basin the river will be confined within well defined lines by necessary training works. The Yuba river was selected as the starting place for the reason that a much larger share of detritus from the mines had been carried down that stream than all the other tributaries of the Sacramento river.

The project as submitted is novel, since nothing of the kind, so far as known, has ever been attempted, and it is to a certain extent experimental. The various structures are simple and are believed to be safe, practicable and reasonably permanent. They can be repaired if required, and if abandoned, not maintained, or never completed, cannot leave the river in any worse shape than at present. If constructed, it is believed that they are capable of storing the debris now in the Yuba river and its tributaries, which is far in excess of that in all the other tributaries of the Sacramento river. The result of the storage cannot be otherwise than beneficial to the navigation and commercial interests of the Sacramento and Feather rivers.

In a recent report the Commission say: "Especial attention is invited to the fact

that the object sought to be accomplished is the storage of the detritus now in the Yuba and its tributaries, with a view to the improvement of the rivers below, and decidedly not with a view of permitting unlicensed or indiscriminate hydraulic mining at localities above the impounding works. When the works have been completed and in operation for several years there will be time and opportunity to determine whether or not the system is capable of sufficient expansion to warrant an attempt at storing therein the tailings from the hydraulic mines without compelling each mine to impound any or all of its debris."



Fig. 3.—Apparatus Used in Soundings by Boring and Suction, The Narrows, Yuba River.



Fig. 1.—River Bed and Embankment 300 Feet High, Site of Restraining Barrier, Yuba River, Cal.



Fig. 2.—The Narrows, Yuba River, Cal., Where Assistant Engineer Vischer Took Soundings.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON Horticultural Editor

San Francisco, August 30, 1902.

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The Week.

The political heat of the campaign year is rising and promises to glow fiercely this autumn, although it is not a presidential year. One of the great conventions is in session this week in Sacramento and others will follow quickly. It will be a favorable time for the farmers to bring their views and needs forcibly to the attention of the candidates. We do not believe in doing this in narrow or demagogic ways, nor in urging class claims merely as such, but in advocating measures because they are based upon social and individual rights. Enough will be said about fairness to classes and merits of classes without urging, but what agriculture needs is only what belongs to it by the rights which all citizens possess and what is desirable for its promotion in the public interest. Candidates need instruction in these matters, and candidates usually have better ears than incumbents. Every effort should be made during the next few weeks to carefully inform all candidates about the industrial needs of their districts to the meeting of which they should earnestly address themselves. Candidates should know that they are not merely the representatives of the interests and delights of the settlements, but have a duty to discharge to the whole community and to the advancement of its industries. It is just the time now to take up work along these lines and by individual and associated effort bring to all candidates for representative positions a knowledge of what the community needs and expects from them. If more was done in this line we should not have the exhibitions, which have been too numerous in the past, of holders of public trusts without either knowledge or appreciation of the affairs of the districts they represented. It is the fault of constituents that this is the case.

Wheat is moderately firm, for, though futures have bobbed up and down and close a little under the line, spot wheat is as firm as a week ago. The outward movement has been light—one cargo, largely barley. Freighters have dropped about \$1 recently. Barley is unchanged, firm and in good demand. Old oats have fallen to the price of new, as holders have desired to clean them out; some speculators have been pinched in the door. Corn is slow and downward. Rye is quiet and steady. Beans are about the same; some new whites and black-eye beans are in from Sacramento, the latter going at 4½ cents, which is rather high for an opening. Bran and middlings are the same as last week, for, though receipts have been heavy, they have been largely bought to arrive. Hay is in the same class, country purchases arriving freely and going into second hands at last

week's prices; this line of purchased hay is believed to be mostly reeled in now. Beef and mutton are steady and unchanged; hogs are firm at the late decline. Fancy butter is firm—all the rest slow and weak, in competition with cold storage and Eastern stock. Cheese is quiet at the advance, little wholesaling now being done. Eggs are steady to firm for the best; others suffer with cold storage stock, which is pushed into sale at every opportunity. Poultry is in lighter receipt, firm and higher; medium to large chickens being chiefly called for. A few turkeys are selling well. Potatoes are moving again on a cut in overland freights from 75 cents to 55 cents per cental. Many are going forward, although Kansas potatoes are very cheap. Onions are slow, at last week's prices; receipts are moderate, but freights still prevent shipment. Fruits of high quality are improving, though prices are not much changed yet. Dried fruits are quiet; apricots are steadier, but peaches are unchanged and apples lower. Figs are higher here, though some dealers are quoting futures for Eastern delivery at lower prices. The situation is mixed, and there is an issue between dealers which is not helping the trade. Prunes are quotable at last week's prices, but the trade is fearful and still waiting. Almonds are quiet at the advance. Honey is firm. A few Sacramento hops are said to have been sold here at 20@22c, but little is doing. Wool is in good demand, with little in sight, and fall wool largely held back.

The Sacramento growers' agency in this city is undergoing a transformation which may land it high on the plane of success and point the way to other communities. The agency succeeded in getting the trade by the ears in great fashion without doing much for itself, and now it proposes to go straight into the trade for itself and do its fighting from the inside outward, which is usually a more effective way. So long as we do not have here such a public auction sale of all produce which may some day be realized, an agency with a limited line of goods is at a disadvantage, as recent experience clearly showed. Now the Sacramento growers are not to have an agency nor a limited line of goods, but are to handle as an established house everything that people want from Alaska moss to South Sea coconuts, and they can supply their customers and protect themselves at the same time. There is, of course, some risk of success about it, and success depends upon management. Margins may be less than some old line commission men build up their business with, because returns must be made at the full prices realized from sales, and not at estimates of value in favor of the house. The profits will be the commission rates, which are too often only one item to the house's credit. So, if the Sacramento growers can get returns of the full value sold for, they will gain that much at least. Dishonest returns have always been a spot on the reputation of the commission business. There are, and always have been, reputable men in the trade, and they have suffered by the iniquity of their fellow traders as well as producers have. We shall watch with interest to see how the new undertaking succeeds. It is possible that it may open the way for thorough reforms in the city's produce trade.

The prune association is still unsettled as to its future. We have a note from President Woods, dated August 23, which says: "The vote for change of by-laws has not been counted. We are still adjourning from day to day and probably lack ten or twelve votes of a quorum. We expect to count these votes in a very few days." Many reasons for the failure of the association are being alleged and they are sometimes amusing. For example, so ancient and honorable a journal as the New York Journal of Commerce unwisely states that one reason of the failure "is the delusion of the managers that they could distribute their product direct to the consumer." Now the fact is the managers did no such thing. They acted through the old lines of packing and distribution. It is interesting too that other critics say they failed because they did not cut away entirely from the old lines. It is probably true that the managers do not know why they failed and the information they get from the critics does not help much to an understanding of it.

QUERIES AND REPLIES.

Damping-off Orange Seedlings.

TO THE EDITOR:—Please tell me what is the matter with my orange plants and what is the remedy or preventive. I have lost 25% of them already. The orange seed is planted on good soil and covered an inch deep with sand, in a lath house (sides and roof) and watered daily for about seven or eight months, or till it rains. When they grow to an inch high until about 4 inches they wilt and dry up, the green bark and soft fleshy part of the stem at the surface of the sand rots or molds and strips off in your fingers when handled down to a white central thread. When the plant is held to the light a delicate gossamer-like web is seen adhering to the stem, and small rootlets, with grains of sand attached and hanging suspended from hairs. The stem is the only part affected and only at the surface of the ground. The soil is new, never having plants on it before.—PLANT GROWER, Alhambra.

The trouble with orange seedlings which you describe has been encountered by a number of propagators in southern California during the present season. The trouble is generally known as "damping-off," and it is caused by the excessively great multiplication of bacteria in the surface soil. These bacteria enter the young seedling about at the ground surface and produce the result which you describe so faithfully. The conditions favoring damping-off are excessive moisture, and it is found that the constantly maintaining of a wet surface is conducive to the disease, especially when the temperature is rather low. Probably the reason why there is more complaint than usual this season is that the customary amount of water has been applied and the unusually cool season has prevented the evaporation of the surface moisture. The prevention of the disease lies in securing freedom from excessive moisture at the surface. This is sometimes done on a small scale by using a good deal of finely broken charcoal among the young seedlings, but that would be hardly practicable on a very large scale because of the cost. Anything that you can do to facilitate the drying of the surface, while the lower soil still has abundant moisture for satisfactory growth of the seedlings, will be in the right direction. When sub-irrigation of seed beds is feasible, by means of pipes, so that the lower soil has ample moisture and the immediate surface is almost dry, damping-off is unknown. If you find daily watering necessary it would be wise to admit the sun a little while in the morning to dry the surface, and then use the shade against the intense heat of midday. Adjustable shades are used by some growers for this purpose. If rather more water could be used at one irrigation, so that the wetting of the surface is not so frequent, it would also be desirable practice. Perhaps the general suggestion that any arrangement which tends to entirely dry the surface without robbing the seedling of moisture below, will enable you to arrange things so that your losses in the future will be very much less. Spraying with the Bordeaux mixture has been found to reduce the trouble, but drying the surface to produce conditions unfavorable for the growth of the bacteria is usually all that is required, and this policy should begin early that the evil may be prevented.

Plants for Bank Binding.

TO THE EDITOR:—I am putting up a high bank in the northern part of the State and would like to know what kind of grass would be best to plant on the slopes of this embankment to prevent washing from rain and melting snow. The material is volcanic gravel, sand and ashes, but vegetation seems to grow well in it. The ground freezes to the depth of 8 or 10 inches occasionally and is very dry in summer. Bermuda grass and Australian rye grass have been suggested to me, but I understand the former needs lots of water to start it from seed, and that the latter will not stand frost. What is needed is something that will form a thick mat of roots.—READER, San Francisco.

In most valley situations in California Bermuda grass is the best for bank or levee binding, because it will endure any degree of drouth and roots at all the joints of its long underground stems. It is, however, somewhat subject to frost and would turn brown in the winter. We are not sure how it would be affected by the freezing of the ground to a depth of 8 or 10 inches, but, as its roots much more deeply than that, we believe it would show up again in good shape after the freezing was over. It will penetrate almost any distance, and has had credit in some

counties of going through the stone walls into the county jails. The Australian rye grass is not subject to frost. It is a very hardy grass and will grow all through the California winter in the valleys. It has not, however, running roots, and for that reason does not bind down the soil as Bermuda grass does. Bermuda grass is very difficult to start from the seed. The proper method of propagation is to get the roots in large quantity, run them through a hay cutter, so as to cut them into lengths of an inch or two, and then cover them in the soil. Plants start readily from these pieces and they do not require any great amount of moisture to start growth. If you write to the Experiment Station, Tucson, Ariz., and ask for their circular about the plant known as lippia, which they recommend very highly for banks and drifting sands, you may find it worth trying. It is said to be very hardy and very persistent.

Silo Plants and Practice.

To THE EDITOR:—As to the value of dent corn growing 8 or 9 feet high but not earing, will there be as much nutriment as though the corn had eared well? Corn will grow in Perris valley and produce a large amount of fodder, but very little grain (ears). That corn ears badly in Perris valley and that beans and cow peas do not pod well has excited comment there, and residents would like to know why. If the hoops are put up tight before the ensilage is put in, need they be loosened afterward? —READER, Ethanac.

The value of corn stalks without ears is less than when ears are formed. For this reason, green corn for the silo is allowed to bring the ears nearly to the roasting stage before cutting. However, if corn will grow in your valley a large amount of fodder without ears, it still may be valuable for the silo, even though it does not reach the very highest percentage of nutritive quality. We are unable to state why the ears do not appear naturally in the Perris valley. The scant bearing of beans and cow peas is usually due to heat and dry air. In the hotter parts of the San Joaquin valley the blossoms of some kinds of beans are ineffective when they appear during the summer drouth and heat, but the pods appear in good quantity after the heat has passed, so that a very satisfactory growth of beans is obtained in the fall from the very same plants which did not set pods well in the summer. Corn does not seem to relish heat and drouth combined. Heat and moist air combined are far more to its taste.

If the silo is hooped up tight the hoops should be loosened a little after filling, as the expansion of the staves owing to the absorption of moisture may burst the hoops.

Green Manuring for Hops.

To THE EDITOR:—We wish to plant something in our hop fields for the purpose of getting nitrogen and humus. We can buy very large quantities of sweet clover seed, mustard seed and burr clover. We can get the sweet clover seed in the pods, or out of the pods. Which is best for us to plant for the intended purpose? What we want particularly is to benefit the hops, and, if one kind of this seed is exactly as good as another, we would like to plant the kind that will grow something that hogs can eat. We can buy the sweet clover seed at 1/2 cent per pound, mustard seed at about 2 cents per pound and we suppose we can get the burr clover at about 2 cents per pound. The sweet clover is easiest for us to get and we can get as much of it as we want.—HOP GROWER, Yuba county.

Sweet clover (*Melilotus alba*) has been very widely spoken of for green manuring in Arizona. It is a very hardy and deep-rooting plant. It is, however, very inferior for feed purposes, as most grazing animals will not eat it, unless pressed to it by hunger. For this reason it would not be satisfactory to you for hog feed. Mustard makes considerable green stuff to plow under; but mustard is not a leguminous plant, and, consequently, has no power of fixing atmospheric nitrogen. Burr clover is the best of the plants you mention, both for the good of the soil and as a forage plant. Better, perhaps, than this is to make a sowing, after the fall rains, of oats and field peas. The oats help the peas to upright growth and make it possible to cut them with mower. They are both hardy and are not injured by our ordinary fall frosts, consequently make large growth at the time of the year when surplus water is available. The combination of oats and peas fed green is very satisfactory either for hogs or cows, and the pea roots

add nitrogen to the soil through the action of the bacteria, which form tubercles upon them.

Russian Golden Willow.

To THE EDITOR:—Will you kindly tell what you know about the Golden Russian willow? Is it evergreen? Will it be suitable for a hedge in this climate? Is it a fast grower? Where may I get plants or cuttings? Is it superior to privet? Or, in this climate, would something else be better for a hedge? I noticed in an Eastern publication an illustration of a hedge of the Russian willow at the North Dakota Station; hence the queries.—READER, Yreka.

The Golden Russian willow grown in Dakota is a basket or Osier willow, which has a very bright yellow bark. Its botanical name is *Salix viminalis* Regelis. It is a rapid-growing plant and makes a tree of the ordinary style of willow trees, unless it is constantly cut back and forced to make new shoots each year, and these, after being stripped of their bark, are used for basket weaving, etc. It is not an evergreen, nor is it suitable for a hedge plant, as we understand the term. If cut back constantly it will make a thick mass of shoots, but it can not be pruned down and kept within form as we usually treat hedge plants. It can not, for example, be treated like privet in this regard.

Wire Worms and Cabbage Plants.

To THE EDITOR:—Having planted cabbage plants during the past five days, yesterday I noticed that some of them seemed dead, and on opening the ground 2 1/2 inches I found that the plants, which were a quarter of an inch in diameter, were eaten clean across by a small wire worm about half an inch long. There were as many as twenty plants destroyed in this manner. As I have more cabbage plants to be planted I desire to know how to destroy these worms.—DAVID JACKS, Monterey county.

It is very hard to do anything with wire worms in the soil. On a small scale one can take soot from the stovepipe and mix it sparingly in the soil into which the plant is to be placed. This is an old gardener's method of disposing of wire worms. On a larger scale a little nitrate of soda may be used, but care must be taken not to use too much nor to get it concentrated around the young plant, for it is destructive to vegetation as well as disagreeable to the worms. Either of these materials carefully used may afford you some help.

Poisonous Milkweed.

To THE EDITOR:—We have a plant here called the milkweed. Lambs up to a year old will eat it when hungry and will die from it after being sick from two to five days. It grows in summer in the bottom of dry creeks, and bees when gathering honey from it will be poisoned. Sometimes as many as twenty will lie dead underneath it. Is there any help when lambs get sick from it? Old sheep seldom eat it.—ALBERT SCHARR, Red Bluff.

The plant is identified by Mr. Hall of the Botanical department of the University as one of our native milkweeds (*Asclepias* sp.), but it is impossible to determine the exact species from the scant material sent. All the true milkweeds are poisonous to stock, and, if possible, should be killed before seeding. A good remedy for lambs suffering from milkweed poisoning is that suggested for poisoning by Indian hemp in the PACIFIC RURAL PRESS of Aug. 9.

Trap for Horn Flies.

To THE EDITOR:—I saw in the PACIFIC RURAL PRESS, in the summer of 1900, the description of a house built as a trap to catch horn flies. There was a door at each end and a trap made in the top, with screening and brushes placed so they would rub all the flies off a cow as she went inside, so that she would come out the other side free from flies, which, all being kept in the house, could be killed. I have lost the description. I want to build such a trap. Will you give the specifications again?—T. A. VARIAN, Humboldt county.

It is just as well that you lost the description, for you overlooked the account which we published later that the arrangement was not satisfactory. Until we get other data we cannot advise such a building. Did any reader try it, and, if so, with what results?

Sand Lucerne.

To THE EDITOR:—Would sand lucerne be better than alfalfa where the water level is less than 4 feet?—READER, National City.

Sand lucerne (*medicago media*) is so far only a plant for experiment, as its adaptability is not suf-

ficiently demonstrated to make it safe for large investment. Whether it would succeed on the soil you mention can only be told by trial.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 25, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has been cool during the past week, causing deciduous fruits to ripen slowly. Almond harvest continues and fruit drying is progressing slowly. In some localities the grape crop is reported to be short, probably on account of previous hot weather, but later reports may modify these estimates. Pears and prunes are doing well. Orchardists are drying Bartlett pears. All varieties of cling and freestone peaches are being picked and shipped. White Adriatic figs are ripening near Palermo. Grain harvest is almost finished. Grape picking is in progress. Hops, sugar beets, melons and all vegetables are growing nicely. No complaints of any character are noted in the reports received this week.

COAST AND BAY SECTIONS.

Cool weather, clear in the interior, and generally cloudy or foggy along the immediate coast, prevailed during the week. This has been favorable for growing summer crops. Hay baling is in progress. The crop is large and quality excellent. The second crop of figs is ripening. Muscat and wine grapes are doing nicely, and sugar beets are almost ready to cut. In general, throughout the section Bartlett pears, prunes, plums and grapes are in very good condition. Shipments of fruit are heavy and canneries and driers are busy. A report from Niles states that the first car of dried peaches, weighing fifteen tons, was started East during the week. Large quantities of peaches are being dried, while prune drying is just commencing. In the northern coast counties canning crops will be somewhat later than usual on account of cool weather. Bean picking is progressing in Lake county and wheat threshing is well advanced. Hops are in good condition. In the southern counties beans are maturing slowly, with prospects for an average crop. Sugar beets are about the same as last reported.

SAN JOAQUIN VALLEY.

Clear weather, with moderately warm days and cool nights, prevailed during the week. These conditions have been favorable for the maturing and ripening of all crops. The grain harvest is about over in all sections and the yield has been large. Straw is now being hauled and preparations are being made for fall plowing. Large crops of deciduous fruits, except pears, are reported from all sections, and canneries and driers are running full capacity. Egyptian corn is doing nicely. Sweet potatoes are a large crop and being shipped freely. Grape vines are in first-class condition and a large first crop of fruit seems assured. The grapes are reported to be sugaring slowly in some sections, owing to the cool weather. Picking for drying will commence in most sections during the coming week. Table grapes are ripening rapidly. Green feed is scarce. Live stock are in good condition. Citrus fruits are doing well.

SOUTHERN CALIFORNIA.

The weather has been generally cool, with cloudy nights and mornings and warm afternoons. Grapes are ripening rapidly and will be ready for raisin making earlier than usual. Melons are being gathered in large quantities, but are reported to be small and hardly up to the average in quality. Citrus fruits are doing nicely. Deciduous fruits are, on the whole, not quite up to the average. Walnuts continue to look well. Corn cutting for fodder is about completed and potatoes are being planted. Tomatoes are doing well. The season for marketing and drying peaches is now at its height. Peaches are reported to be of good size where properly thinned. Sugar beets are in good condition. The grain yield is estimated at about two-thirds of an ordinary crop.

EUREKA SUMMARY.—Harvesting and threshing are progressing satisfactorily. Vegetables are doing well. No change reported in the condition of fruit. The pastures in northern Humboldt are drying. Rain is much needed in the interior.

LOS ANGELES SUMMARY.—Considerable cloudiness and cool for the season, but conditions are favorable for fruits and vegetables, supply and quality being good. Fall potatoes are being planted. Peaches and Bartlett pears are ripening rapidly.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 27, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date, Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.23	.03	.25	.62	52	52
Red Bluff.....	.00	.00	.05	.94	58	58
Sacramento.....	.00	.00	.03	.90	52	52
San Francisco.....	.00	.00	.03	.66	54	54
Fresno.....	.00	.00	.05	.98	56	56
Independence.....	.29	.42	.07	.88	56	56
San Luis Obispo.....	.00	.18	.04	.74	48	48
Los Angeles.....	.00	.09	.05	.80	52	52
San Diego.....	.00	.90	.07	.72	56	56
Yuma.....	.00	.11	.22	.51	104	72

THE VINEYARD.

California Grape Interests.

By MR. G. W. PELTIER of Sacramento, in the Bee.

The common European grape vine (*Vitis vinifera*) can be traced back to the age of remote antiquity. The land of its nativity is doubted. Probably it is indigenous to the country in the hills south of the Caspian sea, to the shores of the Persian gulf and the Indian sea and eastward to the Himalayas. It is first mentioned in the Bible in the book of Genesis, chapter IX, 20th verse: "And Noah began to be an husbandman, and planted a vineyard, and drank of wine and was drunken; and he was uncovered in his tent."

The vine was introduced into the southern part of France and Italy, from across the Mediterranean sea, about 600 B. C.; into Germany about 3 B. C., on the Rhine and Moselle about 280 B. C., in England by the Romans, in the Azores, Madeira and Canary islands by the Spanish and Portuguese. The first introduction of the European vine into the United States was in the year 1564 by the Spaniards, and in California about the middle of the last century by the Mission Fathers, the latter introduction being the origin of the old and popular California Mission grapes.

In the Holy Land it is reported that the grape vines grew to such size that they were used for lumber—making boards as long as 12 feet and 15 inches wide.

IN CALIFORNIA.—Before the settlement of California by the missionaries, the most favored locations for grape culture in the world were the countries bordering on the Mediterranean sea.

After the great mining excitement of early California had subsided, a part of the population was attracted by the agricultural possibilities of the State. The development of the soil commenced to receive a great deal of attention. Besides the raising of hay, cereals, fruits and vegetables, the propagation and culture of the vine for table use and its manufacture into wine, was quite largely taken up by a number of enterprising enthusiasts.

For many years the Mission Fathers had developed, by object lessons in grape culture, that California was pre-eminently the home of the vine and a paradise for the viticulturist. A failure in the grape crop never having been recorded—contrariwise, the never-failing seasons, the mild changes of the atmosphere of the spring months, the mellow rays of the autumn sun, developed and matured the berries into almost a perfect condition, the size, flavor, quality and quantity not being excelled by any European country. In this manner it became established that the grape vine would flourish and thrive under the balmy influences and salubriousness of California's climate and in her varieties of soil.

THE NEW REGIME.—As early as 1867 a Californian, after having spent many years' residence on the borders of the Mediterranean sea, several trips in the south of Spain, and having spent some time in China, Japan, Java, visiting South and Central America, said he became convinced that California possessed all the advantages to become the land of the vine, the fig, the orange, the olive and the palm. His words were prophetic.

The salubrity of the climate, variety of soil, long summer seasons without rain, dry atmosphere, favorable autumns for ripening and picking grapes, soon attracted many viticulturists to our so favored country, who began the culture of grape vines and the planting of vineyards. Many choice varieties were imported from France, Germany and other foreign countries, and the vines planted at random in different sections of the State, from Napa to San Diego.

REQUIREMENTS OF THE VINE.—A very even or equable climate, where the thermometer varies but a few degrees during the year, with an unvarying temperature of from 60° to 62°, is not conducive to development of the vine; the grapes do not arrive at that stage of maturity that will make a good quality of wine. To ripen the berries of the grape vine to a state of perfection requires a certain cycle of vegetation. In a country where an excess of heat and cold obtains, the culture of the vine can not be successful; there should be an annual mean temperature of not less than 50° to 52° F. An average of 62° to 70°, as in California, is ideal.

The early vintagers of California, from lack of experience, suffered on account of not knowing what varieties of grapes would flourish best in the different sections of the State. The choice of lands and locations being so varied and scattered—from Napa county in the north to San Diego in the south, and from the bay counties to the Sierra Nevada foothills, under as many varying influences of climate and conditions of soil—led to many failures and financial disasters.

LOCAL ADAPTATIONS.—As the years passed by, and knowledge was gained by the vicissitudes of the pioneers, it was demonstrated that certain varieties of grapes would do better in some sections of the State than in others; that location of vineyard, cli-

matic conditions and soils had a wonderful influence on the quantity of grapes produced.

A grape that would make a good red wine in Napa county would not give the same result in Fresno county, and conversely.

The State was finally districted by counties, as experiences and results showed the existence of conditions to produce superior grapes of the different varieties for table use, wine and raisin purposes.

The dry-wine counties—that is, those counties that make clarets and white wines—were designated as Napa, Sonoma, Santa Clara and the eastern part of Alameda county.

The sweet-wine counties—sherries, ports, angelicas, madeiras, muscats and tokays—were partitioned off as Sacramento, San Joaquin, Fresno and contiguous territory.

While in all of these counties grapes can be produced that can be made up into all varieties of wine, yet, as I have segregated the counties, they each have a real and recognized merit for being particularly located and adapted for the production of grapes that will develop their respective varieties of wine—into better tone, color, spirituousity and finesse.

The same is true as to table and raisin grapes—we are all familiar with the celebrated Flame Tokay belt of the American river, and Fresno is world-famous for its raisins.

This is due entirely to the kind and the quality of the soil and the influences of the climate.

DISTRICTS.—The vintages of France are known only by her districts and varieties of grapes grown. The districts have a distinguishing mark or type of wine, characterized by the grapes grown in each district, which regulates the value of the wines when placed upon the market.

A connoisseur will immediately recognize a Chateau Margaux, Lafitte or Latour as the product of the Medoc district, on the Garonne river, and the characteristic grape being the Cabernet Sauvignon; a Chateau Yquem from the Sauterne district, on the Loire, characterized by the Semillon grape; Clos Vougeot, a Burgundy, the wine of Napoleon, from the Cote d'Or (the Golden Hillside), characterized by the Black Burgundy grape; champagnes from Reims and Epernay, characterized by the Pineau grape. It is the result of the great varieties of the soil and climate.

AS A BUSINESS.—The culture of grapes has ever been a pleasant and profitable occupation; it has also had its rise, glory and fall.

Similar to most enterprises, it has had its depressions, and there have been times when the business did not hold out ordinary inducements for permanent investment.

It is not hazarding too much to state, however, that it has averaged very much better than almost any other branch of husbandry.

At present there is no crop that will pay the profits that a matured, intelligently planted, well-managed, practically farmed vineyard, either wine or table—and in the fancy shipping varieties of grape the gains border on the abnormal.

These conditions have existed for some years past, and, from indications, the future is full of promise, and it appears rational to say that good prices will prevail indefinitely.

Other than the errors incident to all new schemes and enterprises, the development of unknown and untried soils, where results must be made known by time, where choice of variety is a dominant factor, where good judgment should be exercised, and in various details of general management, the culture of grapes in California has been a reliable, safe and successful venture, until the appearance of the viticulturist's dreaded and fatal enemy, phylloxera.

In the use of resistant stock lies the only safety for new planting of the vine. When grafted upon roots of this character, even the most susceptible of European varieties flourish in security. By this means the vine industry of France has been restored to its former magnitude. And all authorities agree in the conclusion that it is the one certain and universal means of protection from the parasite. The cost of resistant vineyards is greater than that of vines ungrafted, but the security and increased vigor gained by the employment of resistants far more than makes up in the long run for the additional outlay.

That Vine Hopper.

TO THE EDITOR:—In your issue of the 9th you say that no satisfactory remedy against this insect has been found. I beg to differ with you, and since I am acquainted with the insect since 1864, when it made its appearance around Hermann, Mo., in the vineyards there, and I have encountered them here frequently, I believe I know something about them, and how to counteract their ravages. We used with great success the torch remedy at night, making torches of some very inflammable material, which one man carries through the middle row, while two others, right and left of him, beat the vines and drive the insects into the flames of the torch, which fall to the ground scorched by them. But—an ounce of preventive is better than a pound of cure. This consists in topping the young growth of the vine, as soon as it is 18 inches high, in summer. This stops the growth and induces each shoot to throw out several

branches with healthy young foliage, which the hoppers injure very little, and which protects the fruit from the rays of the sun. I suggested this to Mr. H. P. Livermore in 1883, when he was manager of the Natoma vineyards, when the Flame Tokay had suffered very much, and he found it very effective for this, perhaps the most susceptible of all varieties, which ripened perfectly the next summer.

Napa.

GEO. HUSMANN.

The vine hopper at Natoma is probably the same that they have to contend with nearby at Florin, and different from the Fresno hopper. It is not the former, but the latter one, for which we said no practicable remedy is known. We shall be glad to know that we are mistaken. Our Fresno readers can say what they think of Prof. Husmann's propositions.

FRUIT PRESERVATION.

The California Canned Fruit Industry.

By MR. C. H. BENTLEY of the California Cannery Association in the Sacramento Bee.

We find from our experience that the wide divergence of soil and climate in California produces a corresponding divergence in the quality and different varieties of fruits. The best deciduous fruits are undoubtedly found north of Tehachapi; Alameda, Santa Clara and other coast counties produce the best cherries, apricots and smaller fruit, while Sacramento, Butte, Placer and other interior counties yield the best peaches and pears.

Sacramento is one of the most advantageous points in the California canned goods business. It is an important center for assembling goods for distribution, aside from the goods which are packed in the city itself. Owing to the low river freights and location at the center of the diverging lines of the railroads, which reach the best peach districts in the State, Sacramento will always be an increasingly prominent factor in the business.

There are eleven canneries in the Sacramento valley, which may be considered as in a sense tributary to Sacramento. The combined output is over 500,000 cases, figuring twenty-four cans to the case. The eleven canneries referred to are the Grand Island Asparagus Canning Co. on the Sacramento river, the Bendel-Nelson Co. at Gridley, the Central California Canneries Co. plant at Sacramento, and eight different canneries belonging to the California Fruit Cannery Association and located at Chico, Biggs, Yuba City, Marysville, Lincoln, Sacramento, Courtland (Trasks Landing) and Stockton.

THE CANNING SEASON.—The Sacramento plant of the California Fruit Cannery Association enjoys the distinction of having the longest season of any cannery in the Sacramento or San Joaquin valleys. The season begins with asparagus in March, and with some small interruptions between seasons, it packs peas, string beans, strawberries, currants, cherries, apricots, peaches, plums, pears, grapes and minor varieties of fruits, closing the season with the pack of tomatoes, which sometimes continues until late in November. Outside of Sacramento, the canneries in the Sacramento and San Joaquin valleys are obliged to confine their operations almost entirely to peaches and pears, so their season is correspondingly short. The two canneries on the Sacramento river at Trasks Landing and on Grand Island confine their operations exclusively to asparagus.

The annual output of California canned fruits and vegetables may be roughly estimated at 3,000,000 cases of twenty-four cans to the case. The fruits are distributed to nearly all the markets of the world, while staple vegetables, like peas and tomatoes, find their market almost entirely on the Pacific coast. Apricots, peaches and pears are the chief varieties packed, and the California product is without doubt the finest in the world. New York State produces very fine berries, but on other varieties California has no equal.

Great injury has been done by the manufacture of cheap adulterated jellies and jams in Eastern States, injuring the trade on California products. "Skins and cores" of apples are sold throughout the Eastern States to make jelly; this is doctored with glucose, coloring matter and flavoring extracts ad libitum, making it difficult for the pure food manufacturer to reach any but high class, discriminating trade.

Until recent years, France has shipped large quantities of peas and string beans to this country, highly colored by the use of chemicals. The domestic product is now considered superior and has driven the French product almost entirely from the market.

EXPORTS.—Under the present conditions, trade will increase in the Orient and South Africa and the United Kingdom. Australia has recently put on a prohibitory tariff to protect local enterprises. China is likely to raise the present tariff on all importations, so as to raise the indemnity. Great Britain put a tariff on canned fruits last year, which may go higher. Owing to an almost prohibitory tariff, the trade has never been developed on the continent of Europe. Domestic trade has been well developed. Owing to increased and improved transportation

facilities, outside markets which formerly depended on canned goods are now receiving citrus fruits and vegetables throughout the winter. The improved quality and reduced price of California prunes, raisins and dried fruits have reduced the demand for the cheaper grades of canned fruits. On the whole, therefore, no great increase in demand can be expected, unless under a reciprocity treaty or compromise the countries of the continent of Europe can be persuaded to reduce their prohibitory tariff.

The canned goods business suffers from the heavy duty levied on tinplates, the domestic manufacturers having raised their price in direct proportion to the amount of the tariff, in spite of the fact that they are admittedly making them more cheaply than their English competitors. This is a heavy handicap for the canned goods business, as the tin can costs more than the fruit contained in it. On export trade this is made good to a considerable extent, by the refunding of a certain percentage of duty originally paid, but for the domestic trade this tariff raises the price of staples like canned corn, canned peas, canned tomatoes 10% for every laboring man of family in the country.

THE STOCK YARD.

Judging Stock at the Fairs.

As the State Fair will soon be here, and as there promises to be an unusually large display of stock to pass under the decisions of Prof. Carlyle of Wisconsin, the expert judge, it is timely to give our readers the views of another expert, Prof. C. F. Curtis of Iowa, as recently presented in an address before the 1902 annual meeting of the Nebraska Improved Live Stock Breeders' Association at Lincoln:

POINTS OF A JUDGE.—A good judge of live stock must have many qualifications, but above all others he must know animals, and know them for their real merit, for the quality of excellence that goes to make good animals; and, as far as his decision goes, he must know men. A judge must be a man of conviction. He must be firm, and he must not wobble. He must be a man of principle and sound reason for everything he does. The judge may not always be right and have a clearly defined reason for his conviction. He must be a man of keen perception. He must be able to see defects clearly, and to reason accordingly concerning the results, and is governed by nothing except the absolute and positive evidence and its significance, presented before him, all of which should be fairly and judicially weighed before the decision is rendered. The decision, once made, should be based upon such careful and thorough analysis that it can be logically defended and supported, and it should stand, without apology, as the judgment of the judge who rendered it.

I do not hold that a judge can never have occasion to change a decision between two or more animals during the same season or fair circuit. This, in some cases, is entirely justifiable. The animals themselves may change considerably from one show to another, but the cases requiring change of verdict are rather rare and never come so frequently as twice a day, as has been the case at some of our prominent shows during the past season—one of them the Pan-American Exposition. A decision properly reached will not be made one day and changed the next, but will be based upon evidence, substance, qualities and principles that will endure.

THE SINGLE JUDGE.—I believe firmly in the "single judge" system, with the privilege of conferring with a consulting judge, if desired. It is easier to secure one good judge possessing the essential qualifications than two or more. It is seldom that the judgment rendered by a committee is not largely dominated by one man. It is generally the one-man verdict or a compromise, and the necessity for a compromise is often put up as a defense or lame excuse for some very peculiar decision, and the judging committee will render decisions that no member of which would take the responsibility for alone. The single judge system puts the responsibility squarely upon one man, and he knows that he is accountable for what he does. The member of the judging committee has one or two colleagues upon whom he can shift the burden of the blame. The committee system of judging is sometimes urged where two or more breeds come in competition, in accordance with the principle that each breed should have a representative. The judge who goes into the ring as a representative of any particular breed, or interest, is disqualified in advance and is unfit to serve as a judge in any capacity.

OBJECTS OF STOCK SHOWS.—The exhibition of live stock at fairs and public shows has two distinct purposes, viz., the object lesson demonstrating the superiority of good blood and the advantage of profit resulting from improved breeding and feeding. There are other purposes, or incidental features, such as advertising and the skill of the breeder and exhibitor. In the "old country" the British sport loving instinct is prominent, even in the show ring. The British people engage in rivalries solely for the love of sport, while the Americans usually have an eye to

the main chance or vantage ground. Since the British have been outclassed in athletics and in yacht racing, they complain that the Americans are too serious and make sporting contests a business. The prestige of the winning animal or herd is one of the chief attractions of the American show ring. The average exhibitor enjoys the satisfaction of giving his rivals a beating. The show ring in America is an aggressive campaign. The late Senator John J. Ingalls said: "The first thing our pilgrim fathers did, after landing, was to fall on their knees; the next thing they did was to fall on the aborigines." And this has been the American spirit ever since. It is the spirit of the show ring. The show ring seeks to exterminate the inferior animal and inculcate lessons concerning high types.

The live stock judge rarely has an easy task. He generally faces a large ring of varying types and conditions. Show animals will have their off days and appear at a marked disadvantage on some occasions. On the other hand, the skill of the expert showman always helps the animal to hide defects and present a good form, whether real or apparent. Under this and many other trying conditions a judge is expected to go into the ring and in a few minutes properly rate animals that the owners themselves may have been in doubt about for months. That he does not succeed in instances—particularly where competition is keen, the classes large and the types variable—is not a matter of wonder or surprise.

EDUCATIONAL PURPOSES.—The primary purpose of live stock exhibitions is education and instruction. This should be kept prominently and clearly in mind by the fair managers and judges. There is one essential of a successful show at the outset, which is due alike to the judge, the exhibitor and the public, viz., a well arranged and well managed show ring. This need has never been more apparent than during the past two years. A live stock exhibition has an attraction, and even a fascination, for all classes of people. The ring should be of ample size and afford comfortable seating capacity outside the inclosure for stock. In providing facilities of this kind the most economical use of space will come from arranging the seats in the outer circle of the inclosure, and the benches should have an incline of 30° to 45°, in order that there may be an unobstructed view. In the center of the ring there may be a small, low inclosure for exhibitors, attendants, reporters and others who have occasion to be near the animals while they are being judged. A building or pavilion of this kind will afford accommodations for showing several rings of animals at once and furnish entertainment for a large audience. A judge cannot be expected to do his best work where the people are crowded so closely about the ring that he can scarcely see more than one animal at a time. To form a correct estimate of the animal the judge needs to see it from all points of view, both standing and moving, and near at hand and at a distance. He needs, also, to see the animal in these conditions alone and in a comparison with other animals that are competing. A closely crowded ring, where the judge's impression of the animal comes largely from excessive handling, does not afford proper conditions for good work. The eye is a safer guide than the hand. The touch should be used only to verify or test the impression of sight.

THE IRRIGATOR.

The Effect of Different Amounts of Water Upon the Yield of Potatoes.

In connection with general work in determining the duty of water for various crops according to the usual practice of the irrigator, the Wyoming Experiment Station has carried on some experiments during the past two seasons to determine what effect the insufficient and excessive use of water, as commonly understood, has upon the yield of potatoes.

Burton P. Fleming, assistant in irrigation, gives an outline of results, but a more full account of the experiment will be produced in a bulletin to appear shortly, the facts and results being given briefly here.

IRRIGATED POTATOES.—The potato crop is one which can be grown quite successfully under our conditions, and a more thorough knowledge of its moisture requirements will be of value in aiding farmers to make conditions so far as they are able to control them as favorable as possible to the production of a large and profitable crop. Although the terms insufficient, excessive and correct are used in describing the different amounts of water used, still it is in a relative sense. Practically nothing is known as yet regarding the correct amount of water used to produce maximum yields or the times at which this water should be applied. The experiments here reported being mainly to determine if the usual practice is or is not the best, the amount of water which a skillful irrigator thought correct is taken as the standard, and amounts which, in his opinion, were not enough or too much to produce the best crop are termed insufficient and excessive, respectively.

While such an experiment depends more or less

upon the judgment of the irrigator and must for this reason be more or less unsatisfactory, still it is thought that the variation in the yields produced by the use of varying amounts of water is shown very well. The irrigator was not limited to the amount of water he should use or the time at which he should use it, he merely being instructed to irrigate one plat with what he considered the correct amount of water and on the others apply larger and smaller amounts respectively.

THE EXPERIMENTS.—The plats were laid off adjacent to each other so that conditions of soil, temperature and the like should be nearly similar, and all plats were planted with a uniform quantity and kind of seed. The plats are designated respectively as A, B, and C. Plat A was intended to receive an insufficient amount of water, Plat B the correct amount and Plat C too much.

The resultant yields do not represent the average in this locality, as hailstorms in the forepart of each of the seasons in which the work was carried seriously injured the growth of the plants. The average yield in years when conditions have been normal has been 100 bushels per acre, but the largest in the past two years upon the plats experimented upon has been but 90 bushels per acre. The comparative value of the results was not impaired, however, for each of the plats was affected alike and the growth which the plants made after the storm indicates the comparative value of the treatment which each of the several plats received.

The yield from Plats A, B, and C in 1900 were of both marketable and small tubers, 1176, 2230 and 3069 pounds per acre respectively, and the corresponding depths of water received by the plats from irrigation and rainfall were approximately 5, 7 and 10 inches. In 1901 the yields on the respective plats were 3332, 3956 and the corresponding depths of water 17, 8 and 43 inches.

The results show for both seasons that the plats receiving the largest amounts of water gave the largest yield of marketable tubers and the greatest weight.

THE GROWERS' IDEA.—A point of considerable interest is the variation in the amount of water which, in the opinion of the farmer, was correct, too much, and not enough. In 1901 the plat supposed to have received an insufficient amount of water actually received five times as much as the plat which was supposed to have been irrigated correctly. This is an illustration of how widely the irrigator's judgment may vary as to the water requirements of the same crops under precisely similar conditions. It must be said, however, that in both instances the plats supposed to receive an insufficient amount of water gave the smallest yields. Perhaps the most interesting thing found in the results is the relation between the yield per acre inch and the total amount of water supplied. While in both seasons the heaviest yield was produced by the largest amount of water, still it would have been produced at a considerable loss had the water been of any great value. It will, of course, require a large number of experiments to determine the maximum economic value of, for instance, one acre inch of water for various crops under different conditions. However, for potatoes and for the experiments of the last two seasons at Laramie, the largest yields per acre inch seem to have been produced when from 7 to 10 acre inches was applied. An acre inch is such an amount of water as will cover an area of one acre to a uniform depth of one inch.

Where farmers are so situated that they have to buy water, or during seasons of drouth, a relation like the above, showing the amount to apply to produce the largest crop with the least expense for water will, when well established, be of a great deal of value in aiding farmers to make the best use of a limited volume of water.

FURTHER DATA DESIRABLE.—Of course the results for these two seasons are by no means conclusive. The amount of water which one plat received, sufficient to have covered it to a depth of three and one-half feet, seems enormous, yet this plat produced the largest yield of potatoes, and the difference in the table qualities of the potatoes from this plat and from those receiving smaller amounts of water is said not to have been perceptible. It is possible that a still greater amount of water supplied would have produced a still greater yield. There is a limit, however, to the amount of water which should be applied to a crop, an excessive amount of moisture not only injuring the soil in many ways, but also giving a product which is apt to contain too large a percentage of water. This is particularly true of potatoes and to some extent holds true also for other crops.

It is proposed to carry on studies such as the above for a series of years, thereby eliminating the accidental variations due to season. Hereafter, however, it is proposed to apply certain definite amounts of water at certain definite times and by this means, it is hoped, that the moisture requirements of crops during the period of growth may be determined, as well as the maximum yield, which can be attained by the application of large amounts of water under certain conditions of soil, temperature, etc., and the amount of water to apply to most economically produce a crop.

FRUIT MARKETING.

A Suggestion.

How much judicious publicity, well supported by fact, affects the market may be seen this year in the course of the grain market. Early in June the PACIFIC RURAL PRESS made the bareness of the barley market, the comparative shortness of this year's crop, and the judgment of capable men as to what the price generally should be to farmers, plain in a few short items. Justified by this showing, farmers who had not sold generally held back and got the raises which dealers, owing to conditions between themselves which naturally crop up in a bare market, were compelled to give in order to do business. Thus the farmers, or some of them, at least, have been able to get for grain something like the value justified by the relation between producer and consumer, had there been such relation direct. With the market circumstances different, this good result, of course, could not have been brought about in this way; but an equally plain newspaper statement of other circumstances would have enabled producers, had they a safe form of local organization, power to command shipping facilities on sound business terms, and direct connection with consuming markets, to secure the same results in other ways. But the organization of producers must be a safe one for them. This history of what has happened this year in grain could be extended by a history of what has so far happened and is likely to happen in the case of almonds and prunes. There the value of merely enlightenment as to market conditions has been abundantly demonstrated, in the way of advance of price in one case and maintenance of something like a fair price in the other. But in fruit lines, as in grain handling, the final, best form of organization can hardly be said to have yet been reached, though progress is probably being made on the whole. Greater progress in that way is one of the problems of the future.

Relative to Fruit Trade.

The recent shipment, as an experiment, of two carloads of green peaches from Georgia to England, is reported as highly successful.

Porter Bros. Co. has increased the capacity of its packing house at Red Bluff, and will have an output of twenty-five carloads of pears, green, at Vina station, this year.

Some San Joaquin valley growers of peaches, at Fresno, are endeavoring to perfect a simple business organization for handling at least a portion of their output independently this year, with a view to permanently entering trade circles.

H. Chegaray and J. Martineau, of Bordeaux, France, on account of the shortage in the French prune crop, have been in San Francisco some weeks, visiting many of the large orchards of the State, for the purpose of laying in a supply from America.

The California Cured Fruit Association has enough prospective litigation ahead to require the continuance of its existence possibly for some time. The latest suit is one filed August 22 against the packers who were combined with it for \$125,000. If the amendments to its organic laws, making it a more practical organization, have been adopted, it may yet prove a more effective organization than ever. The principal thing necessary is to eliminate legally the "members" who have eliminated themselves practically and make a new start with the few faithful.

The Minnewawa Home Packing Co., W. N. and M. E. Sherman managers, near Fresno, built a large cannery and packing house last fall, and during the summer months packed 7000 cases of canned goods, several cars of olive oil, and about ten cars of green fruits, principally grapes. This year they are adding machinery for grading and packing dried fruit and raisins. They use oil as a fuel, and have ample power for running the machinery of a cannery and packing house. They expect this

fall to pack raisins from their own vineyards, probably about twenty cars, and to pack raisins from the vineyards of neighbors, depending upon what they can sell. They are favorably situated for cannery and packing house work, in the heart of a rich fruit district and among large vineyards, and within the locality producing very fine raisins. Their output of olive oil, canned goods, raisins and dried fruit is the product of their own orchards, a real home product. During the summer months they can the fruit as it ripens, sending much to the drier near by, and putting up fruit pulp in large quantities, in five-gallon cans, from which choice fruit jams are manufactured during the winter months. They also can vegetables—asparagus, tomatoes, etc.—for ranch use and for the local trade. With such a variety of products under their sole control, it would be easy to run the packing house during the entire year, which is contemplated, as well as the putting of a salesman on the road continuously.

The speculative element among the fruit packers of California, which has seemed likely to be inactive this year in the lines in which, with the help of Mr. Kearney or at his instance, perhaps, it was so active last year, has broken out in a new place—in the fig line. Half a dozen of the heretofore largest packers of figs, with headquarters at Fresno, attempted to organize themselves into a combine to control the pack, whether for the purpose of regulating the Eastern end of the market or the California one has not yet been made plain; but while they were working at the details of legal organization Griffin & Skelly, Porter Bros. Co. and the Phoenix Raisin Seeding & Packing Co. organized themselves in a simpler business way and bought up the crop for this year—at least most of it, it is believed—at 3½ cents per pound, where the ruling price had been 2½ cents, and it is said in Fresno that the new combination will throw a good deal of its packing to T. J. Hammond, who was one of the other crowd—in other words, it will use his new facilities. It remains to be seen whether the new combination will make the Eastern trade—alias the consumers—pay for this little diversion.

Anent the raisin packing situation, the following from an independent standpoint may be of interest: "In relation to the packing outlook for the coming season, it has been discoursed in the papers, and from this we get our information. There has been an effort to control the packers and hold them in line so as to maintain prices and keep them uniform. This refers to raisins. It is the desire of the association to keep control of all the raisins, and to sell to the packer in such quantities as he may desire them. This seems to be the only solution of the raisin question at this time that will offer equal justice to the grower and to the packer. It is necessary absolutely to protect the interests of the grower first, and to give fair consideration to the rights of the packer. They have made the market for raisins, have enlarged and stimulated the demand, and it is only justice that they reap some of the reward. How best to hold the grower in line is a serious question, and how best to hold the packers in line is another serious question. We have an able director in our Raisin Association at the present time, and we believe they will, if possible, adjust matters as to give equal consideration and justice to the rights and demands of both the grower and the packer. This is the line along which they are working, and we believe that they will succeed. Owing to the unnecessary, unjust and willful cutting of prices last year, the grower feels that he should have a fair price for his raisins this year in order to make up for the loss last year. Owing to the conditions—that of the large crop—it must be handled wisely and cautiously in order to avoid the large carry-over and deterioration in values, and the grower cannot expect to get the full limit of his desires in prices this year, for the trade generally expects prices to be controlled by the supply and the size of the crop. In dried fruits there is little demand. The Eastern buyer knows that the crop is

large, and that the prices must necessarily be low, and he is waiting for the bottom figure before he lays in a supply. These conditions have made the dried fruit market very dull, and the early orders, which were small, have all been filled, and the fruit is now accumulating in the hands of the packer, who must pay interest on the investment, insurance on the goods, until he can sell them. This, we believe, expresses the situation about as it is. We look hopefully for good prices, 3½ or 4 cents for standard raisins, and we are expecting the directors of the Raisin Growers' Association to publish their prices within the next week or ten days; that is, by September 1st. —MINNEWAWA HOME PACKING CO."

Grape Prices in Santa Clara Valley.

The growers of wine grapes, says the San Jose Herald, are looking forward to another profitable season. They believe prices will be as high as last season, which aggregated from \$22.50 to \$32 per ton. These figures were the highest in many years, and converted the wine grape industry from a failure to a success.

The agents of the various wine interests are already making contracts with growers at figures as high as \$26 per ton. These figures are, of course, for excellent fruit, but they are not being snapped up with avidity. In fact, many vineyardists are holding off for \$30 a ton, and believe they will get the price and without difficulty.

It is yet too early to estimate the conditions in the State relative to the wine grape output, but it is believed that it will be larger than last year by considerable. Thus far there have been received no authentic accounts of the conditions abroad. The wine trust last year had considerable difficulty in obtaining all the fruit it required, owing to the efforts of the independent wine makers to pay good prices in advance for grapes. Its advance schedule of prices was completely broken as the season developed, and it would seem that the present season would repeat these conditions.

Within the past year there has been a slight increase in the producing acreage, but nothing large enough to influence the total output. The acreage planted was large, but will not come into bearing for at least two years. All in all, the prospects are for a profitable season for the grower.

Raisin and Currant Crops.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

SPANISH RAISINS.—Referring to my unnumbered dispatch of June 20, 1902, relative to the prospects for this year's raisin crop, I now have the honor to confirm the report that the prospects are for a large and fine crop, which will probably exceed 1,250,000 boxes.

BENJ. H. RIDGELY, U. S. Consul.
Malaga.

TURKISH RAISINS.—In accordance with request of Pacific Commercial Museum, I have to report that conditions at present tend to confirm my crop report of June 23, 1902, on raisins in the Smyrna district. There is expected to be 11,000 tons of red raisins, 30,000 to 32,000 tons of Sultanias and 16,000 tons of black raisins.

RUFUS W. LANE, U. S. Consul.
Smyrna.

CURRENTS.—Supplementing my report of June 21, 1902, upon this season's crop of the Peloponnesus, I have to say that the indications at this writing point to one of the heaviest crops in many years—possibly, to a record-breaking yield. No rain has fallen in the district since my last notice, except in the vicinity of Patras, and this did no damage whatever.

Many currant growers and exporters are estimating the crop at 175,000 tons. Should these figures prove approximately correct, the percentage of retention may be expected to reach one-fifth of the crop, instead of one-eighth, as it was last year, which would reduce the quantity for export to 140,000 tons

—scarcely the equivalent of last year's exportation.

For American growers there is this to be said of the crop in the Peloponnesus: That, having passed the first stages of bad weather in the spring, it is yet confronted frequently with disastrous rains at the time of the vintage, which do not always reduce the quantity but which invariably play havoc with the quality. This was the case last year. Up to last week, before the vintage, every condition was favorable; in the last week, however, the quality was injured at least 25%. At this time there is little chance of the quantity for export proving small. Should disaster overtake the fruit during the month, the retention law, which shifts over a scale of at least 10% to 20%, will be adjusted to the needs of the growers and to the demands of the market.

FRANK W. JACKSON, U. S. Consul.
Patras, Greece, July 16, 1902.

Prune and Walnut Crops in France.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

PRUNES.—I have only to confirm my previous reports as to the prune crop of this region for 1902. The general impression is that there will not be more than one-tenth of an average crop. Merchants from this city and others from the very heart of the prune raising country are sending to California for prunes to fill their orders and keep up their trade.

I have not been able to verify these reports by personal inspection, as the prune growing region is at some distance from Bordeaux, but I think my report for July is entirely correct that "the prune crop of this region for this year will be practically a negligible quantity in the world's market for 1902."

WALNUTS.—The walnut crop of this region for 1902 will evidently be very much below the average. My first report, from a disinterested agent, who went through the departments of Lot and Lot-et-Garonne, the chief walnut producing regions, was to the effect that there were "no walnuts worth taking into account."

More recent reports have practically confirmed his observation. The general impression is that there will be from one-fifth to one-fourth of an average crop—with a decided inclination to the lower figure. What there is of this crop is said to be at this date in very good condition.

Ordinarily there are considerable sales at this season for future delivery, but I am unable to learn of any this year. Making due allowance for the natural tendency of the growers to underestimate the crop with a view of enhancing prices, I should say that it would be entirely safe for American producers to estimate the French walnut crop this year at not more than one-third the average yield.

ALBION W. TOURGEE,
U. S. Consul.
Bordeaux, France, August 1.

The Almond Crop.

TO THE EDITOR:—In reply to your inquiry concerning estimates of almond crop for the season of 1902 I will give them as received by letter, which is very near correct:

Capay Valley Association, 120 tons; Davisville Almond Growers' Association, 215; Mountain View, 75; Winters and vicinity, 50; Orange Vale, 75; Contra Costa Almond Growers' Association, 165; Sacramento county places, 150; Niles, 100; San Jose and vicinity, 50; Woodland, 65; Vacaville, 25; Red Bluff, 30; Chico, 250; Biggs, 200; Live Oak, 35; Acampo, 100; Suisun, 250; Lodi, 75; Concord, 75; Dixon, 50; Los Gatos, 60; Yuba City, 50; Yolo, 150; Stockton, 100; Marysville, 40; Vallejo, 40; Cordelia, 20; Antelope valley, 35; Fair Oaks, 15; Pasadena, 10.

There are several outlying orchards that I could get no reply from. Probably five or six tons would cover it.

J. W. ANDERSON,
Sec. Davisville Almond Growers' Association, Davisville.

Agricultural Review.

ALAMEDA.

APRICOTS GO EAST.—Niles Herald, August 22: The first car of dried fruit to be shipped from this valley was forwarded Wednesday evening. It consisted of 381 sacks of the new crop of apricots, weighing 30,191 pounds, from the E. A. Ellsworth drier. Another car goes forward to-night. These were sold at 5½ cents some time ago. Mr. Ellsworth says he can take no more fruit of any kind for drying, as he now has on hand all that he can handle this season. This means that those who have not provided for the drying of their prunes will have to seek other means to have them taken care of.

FRESNO.

FRESH SMYRNA FIGS GOING EAST.—Republican: George Roeding is going to make the experiment this season of shipping fresh Smyrna figs East. If it can be done successfully—and it is believed it can be—it will create a wide demand for the luscious fruit, which promises to make Fresno county famous. The plan is to ship the fruit by Wells, Fargo & Co. In the early season the company successfully handles a good deal of fresh fruit, putting it first upon the market where it commands fancy prices. There seems no reason why this cannot be done in the case of figs. At any rate, Roeding has agreed to furnish the fruit and the express company will see what it can do in getting it to Eastern points in good condition. It will be shipped in "pony refrigerators" holding from 75 to 100 pounds, and the agents on the route will attend to the icing. If the figs reach their destination in good shape, they will doubtless be in big demand in the East.

COMBINE CONTROLS PEACH MARKET.—Democrat: It is reported that Griffin & Skelly, Porter Bros., Phoenix, Castle Bros., Guggenheimer and Rosenberg Bros. have combined to control the dried peach crop. The general plan of the combine is to fix a maximum price which will be paid to the producer, and a minimum price for which dried peaches will be placed on the Eastern market. This maximum price is said to be 4½ cents per pound. No packer in the combine is permitted to pay more than this figure, but he is not restricted from buying as cheaply as the grower is willing to sell. The cheaper he buys peaches the larger his margin. The minimum price to the Eastern trade is believed to be about 5½ cents. No member of the new association will be permitted to sell for less.

THE GRAPE CROP.—Sanger Herald: Raisin grapes are ripening somewhat slowly, owing to the prevailing cool weather, so that picking will not be likely to commence until after September 1st. Wine grapes are already ripe enough to be picked and hauled to the wineries. Many vineyardists have contracted their first crop of grapes to the wineries at the following prices: Muscats, \$13 per ton; Malagas, \$14; Sultanas, \$15. Owing to such a large percentage of the grapes being converted into wine, it would seem as if the price of raisins should have an upward tendency. At present the packers are offering only 3½ cents per pound for the new crop raisins, delivered before October 1st.

BUSY WITH FRUIT.—Our orchardists are still crying for more help, and there is no excuse for any person to be idle for several weeks to come. They are paying the women and girls 5 cents per box for cutting freestone peaches, and we hear of some who are cutting as high as forty boxes a day. For clings they are paying 7 cents per box.

BEE KEEPERS' MEETING.—At the last meeting of the California Bee Keepers' Association, held at Selma, it was reported that a carload of honey had been sold for 4½ cents per pound to secure ready money, and that 4½ cents was offered for the entire crop. There is a good flow of honey in the alfalfa district, but on the plains feed is very scarce.

RAISIN MEN PAYING BIG PRICES FOR SULPHUR.—Another problem is facing the fruit men in the scarcity of sulphur in the treatment of dried fruit. It is estimated that twenty carloads are used throughout the season and the dealers are facing a dilemma. The French and Italian sulphur which is used mostly in fruit curing has apparently run out, for the San Francisco market is cleaned up with no prospect of a speedy replenishing. The Nevada sulphur is the only brand on hand at the dealers, and even of this the supply is limited. The scarcity of the commodity has caused a rise in the price. In the last two weeks the price has gone up \$15 a ton, making its wholesale price \$62.50. The indications point to a still further advance. Between this and the higher wages to those who gather the fruit the

cost of making the product marketable has materially increased.

PROFIT FROM MELONS.—Enterprise: J. E. Post, who has a small melon patch near Selma, realized the neat sum of \$400 from the crop this season, notwithstanding melons have been low, owing to the large acreage planted this year. Selma soil is well adapted to melons. Some of the finest, most luscious specimens grown in the State can be found here.

GLENN.

ALMONDS RIPENING RAPIDLY.—Orland Register: One hundred and fifty sacks of almonds are being hulled daily at the Bane orchard. He has doubled his force of pickers and is running his huller until 11 or 12 o'clock at nights, with prospects of having to put on two shifts of help and keeping the huller running all the time. The crop is very heavy and is ripening so fast that he can hardly keep up with it. The harvest will doubtless last six weeks or more.

KINGS.

PEACHES AND RAISINS.—Hanford Journal: Peaches are larger than usual this year, and, as to drying, are doing about as well as usual when spread on the drying yard. The fruit is of a better quality than last year and weighs heavier. There seems to be little, if any, anxiety among fruit men for the curing of the peach crop, but there is a fear for the raisin crop. What the outcome of the cool wave of the last few days may result in is only a conjecture. Many predict what has been experienced in some former years—early rains and a bad season for drying raisins. The raisin season is still in the future. When the season comes on it may be all that could be desired.

MERCED.

A BOUNTY FOR SQUIRRELS.—Merced Star: The supervisors have passed an ordinance providing that any person who kills or destroys squirrels within this county shall be paid a bounty of 2 cents for each. In order to collect the bounty, the claimant must take the tails of the squirrels to any person authorized to administer an oath and make affidavit as to the time and place of killing; the tails and affidavits must be deposited with the county clerk; the supervisors must count the tails at their next meeting and authorize the drawing of warrants for the amounts due. The ordinance will go into effect Nov. 10th.

NAPA.

FRUIT MADE INTO BRANDY.—Register: Last year Mr. L. Christin, of Napa, experimented to a limited degree in the making of fruit brandies, with such favorable results as to lead him to invest considerable capital in that direction this year. Within the past week he has handled about twenty-five tons of prunes, plums and peaches, unfit for anything else, and is now placing more tanks in position in order to accommodate more of the fruit. This brandy-making is distinctly a side-issue with Mr. Christin, however, for he expects to crush as many grapes this year as ever before. He says the crop is late and he does not expect to begin crushing before the latter part of September.

PLACER.

GRAPES DESTROYED.—Representative: F. J. Browning reports that at least 75% of the grapes in the vicinity of Pleasant Grove were destroyed by the north wind.

RIVERSIDE.

BIG ONIONS.—Enterprise: Half a dozen onions weighing altogether over twelve pounds were last week brought to the office of the secretary of the Chamber of Commerce by Geo. L. Black of Temecula. They are of the Red Victoria species and were grown on the vegetable ranch of E. A. Thompson in Aguanga valley, 15 miles from Temecula. The largest measures 21 inches in circumference and weighs three pounds ten ounces. The half dozen were sent to the Riverside exhibit at the Los Angeles Chamber of Commerce building.

SAN JOAQUIN.

TOKAY GRAPES \$80 PER TON.—Lodi Herald: The Lodi table grape season opened last Saturday under most favorable circumstances. Tokays all week have sold f. o. b. Lodi for \$1 per 25-pound crate. So far as is known, these prices are the best ever realized at the opening of the grape season in the Lodi district. At the close of last season there were a number of Lodi growers who realized as high as \$2 per crate on Emperors and Tokays, but the season throughout netted the grower about \$1 per crate, which means \$65 a ton net, or \$350 per acre. Three or four growers of Tokays have refused this week to sell at \$1 per crate and would rather take chances of shipping on consignment.

A BIG MELON.—Lodi Sentinel: One of the largest melons of the season was

shipped from Acampo by Messrs. Corell & Patton to the State Board of Trade at San Francisco. It weighed seventy-six pounds.

SANTA BARBARA.

MUSTARD CROP.—The mustard crops are, as a rule, turning out badly, some barely paying expenses of harvesting. It is estimated that the average crop will fall under four bags per acre, which, if correct, will give an output of about 20,000 bags, when the usual yield on 6000 acres would reach between 70,000 and 80,000 bags. This year's prospect of this crop will barely yield cost of production.

SANTA CLARA.

BENEFITS OF FRUIT THINNING.—Gilroy Gazette: This season's experience furnishes some valuable lessons if we will avail ourselves of them. The lack of proper pruning of trees and thinning of fruit gave us an enormous crop of undersized fruit, the evil effects of which are injury to the trees, too much work, and low price for the product. Had fully one-half the apricots been thinned out, the output would have been the same, the cost of caring for the crop less and the market price at least one-third greater.

SANTA CRUZ.

THE APPLE CROP.—Watsonville Pajaronian: It is very generally remarked by packers and orchardists that the Pajaro apple crop is markedly free from worms this season. The fruit is running to better sizes than last year, and the percentage of clean stock is higher.

APPLE BRUSHER.—The Earl Fruit Co. received its apple brusher recently and will give it a thorough test when Bellefleurs come on. The brusher is provided with a feed hopper and the apples are carried down an incline between two 6-foot brush cylinders by means of a carrier belt about 2 inches wide. The machine has a spray attachment at the end of the incline, and water passing through the spray pipe washes the fruit nicely. If the device proves satisfactory, it will be of great value to apple shippers.

SACRAMENTO.

PLENTY HELP FOR HOP YARDS.—Record-Union: Johnson Sides, the big chief of the Piutes, and nearly half of his tribe, have invaded Sacramento, fresh from the hunting grounds in Nevada. The Indians are bound for the hop yards in this vicinity. Many growers are paying 90 cents per hundred, and others pay 95 cents. Four hundred Japanese have been sent from this city to hop yards along the river and to Wheatland, and hundreds of white people bound for the yards arrive in the city daily. Many families are en route for the fields. There are about 2500 acres planted to hops in this district, and from the present outlook there will be plenty of help to garner the crop.

HORSES COULDN'T PULL HIM TO STATE PRISON.—Mail: H. R. Starkweather, of Fair Oaks, a wheat stealer, escapes penitentiary because horses couldn't pull him there. He hauled the stolen grain away in two loads because his horses were too poor to haul it in one load. Had he taken it in one load, the value of the grain would have been sufficient to constitute the theft a felony, punishable by imprisonment in State prison. Taking it in two loads, he was guilty only of two petit larceny offenses. The magistrate sentenced him to imprisonment in the county jail for four months on each charge, the second to begin when the first expires.

VERY LIGHT YIELD OF WINE GRAPES.—Bee: A meeting of the Wine Grape Growers' Association was held at Elk Grove last Saturday, at which the report received from the secretary, E. W. Springstead, indicated that the wine grape crop of that section will be from 25% to 40% short this season. From all indications the crop this year will be but little in excess of that of 1901.

SOLANO.

SATISFACTORY FLAX YIELD.—Dixon Tribune: J. H. Rice cultivated sixty acres of flax on the N. P. Williams place this season. The crop has just been harvested and realized 420 sacks, weighing about 115 pounds each. The flax is pronounced a very superior article and will bring the top of the market price, which is now \$2.50 per sack. Mr. Rice is well satisfied with the experiment and will sow a large acreage next season.

SONOMA.

CHICKEN THIEF GOT A DOSE OF BUCKSHOT.—Petaluma Courier: Thursday at about 1:30 P. M. a chicken thief was reported operating at the J. L. Wlans home on Liberty street, and the old man grabbed his gun and made for the hen house. He found the thief all right, raising havoc in the henhouse, and brought him down at the first shot. The thief was a splendid specimen of the golden or American eagle, and measured 7 feet 4

inches from tip to tip. He is young, not yet having the scales from his legs, and is in full feather and a beauty. His beak has a beautiful curve, with the yellow color of a smooth lemon.

PRUNES ARE DROPPING.—Petaluma Argus: Owing to the hot weather of the past few weeks in the Sonoma valley, the prunes have begun to drop too fast to suit the orchardists, and they fear that a light crop will be the result. The Bartlett pear crop in the valley will be a large one. The trees are loaded down with fine fruit and it has not suffered in the least. Up to the present time the packers and shippers have made only a few contracts. The orchardists are making preparations to dry their fruit crops.

SUTTER.

SOME PUMPKINS PROBABLY.—Independent: A friend of John Giblin, who last winter toured in Europe, sent to Mr. Giblin early in the spring a half dozen seeds taken out of a pumpkin which weighed 400 pounds. The friend found the monster pumpkin in front of an Italian fruit stand in an European town, and after some effort made the Italian understand that he wanted the seed. The pumpkin was opened and the seed procured. In the Giblin orchard two vines are now growing from the few seed planted. The pumpkins are as yet infants, but Mr. Giblin expects to have a curiosity in a few weeks to show his friends.

NEW BEAN CUTTER.—David C. Pool, formerly of Sutter county, has just patented and put on the market a bean cutter which, he claims, will displace the labor of thirty men. The machine will cut two rows at one time and throws the vines into windrows. The blades are made of the finest steel and placed at an angle of 22°, so that they will both slide and cut, preventing their choking up or jumping out of the ground.

TEHAMA.

TWENTY TONS PEACHES BURNED.—Red Bluff Sentinel: A fire occurred in the orchard at the Home place on the Cone ranch recently. The Chinese lessees are cutting, drying and sulphuring peaches, and the fire began in the sulphur boxes. About two carloads or twenty tons of dried peaches were burned.

FINE FRUIT.—Red Bluff Cause: Wm. Perry, one of the fruit growers of the Bend, exhibits a sample lot of fine Muir and Orange cling peaches. There were thirty-six peaches in the box and they weighed twenty pounds. Mr. Perry has a young orchard and his trees have borne heavily ever since they began bearing. The peaches are so large that his cutters cut from fifty-three to seventy-one boxes of fruit easily in a day.

TULARE.

MOUNTAIN APPLES PAY WELL.—Times: Chapparral land has been found to be exceedingly productive when cleared and planted to apple trees. George Dillon, who owns a ten-acre apple orchard on North Tule river, has been engaged in raising apples of different varieties for many years, his trees being from three to twenty years old, and they have always yielded a good crop. Mr. Dillon markets his apples from November till April, hauling them to Porterville in two-ton loads, where he has a storehouse and where the apples are boxed and shipped. There has never been a lack in the demand for the Dillon apples since they were first put on the market, the orders coming from as far north as Sacramento and as far south as Los Angeles, the prices realized being from 2½ cents to 4 cents per pound. Last season Mr. Dillon sold a little over \$1200 worth of the fruit that averaged him 3 cents per pound. The cost of cultivating, picking, hauling and boxing was less than 50 cents per hundred pounds, leaving him a net gain of a little more than \$1000 for his ten-acre crop.

YUBA.

HOP NOTES.—Wheatland Four Corners: A small-sized strike was nipped in the bud last Monday. When the Japs left the Durst field a few of the whites followed example and endeavored to induce others to do likewise. The leader was arrested for disturbing the peace, and all but a few of the strikers went back to work. Hop picking is progressing in the Durst yards at the rate of twenty-five tons of cured hops per day and will last about two weeks after this. The price paid to pickers is 90 cents per 100 pounds of green hops, with a bonus of 10 cents per 100 pounds to all pickers who continue to work until the harvest is completed. Pickers are making from \$1.50 to \$2 a day on an average. Their work is satisfactory and the hops in the houses are, if possible, the best quality ever turned out. There are about 1000 pickers and 90 day hands. The prevailing wages are \$1.15 and \$1.25. Dryers receive \$5 per day. The picking force is full and no more pickers are required.

THE HOME CIRCLE.

Preserving Time.

Said Mr. Baldwin Apple
To Mrs. Bartlett Pear:
"You're growing very plump, madam,
And also very fair.

"And there's Mrs. Clingstone Peach,
So mellowed by the heat,
Upon my word she really looks
Quite good enough to eat.

"And all the Misses Crabapple
Have blushed so rosy red
That very soon the farmer's wife
To pluck them will be led.

"Just see the Isabellas!
They're growing so apace
That they really are beginning
To get purple in the face.

"Our happy time is over,
For Mrs. Green Gage Plum
Says she knows unto her sorrow
Preserving time has come."

"Yes," said Mrs. Bartlett Pear,
"Our day is almost o'er,
And soon we shall be smothering
In syrup by the score."

And before the month was ended
The fruits that looked so fair
Had vanished from among the leaves,
And the trees were stripped and bare.

They were all of them in pickle,
Or in some dreadful scrape.
"I'm cider," sighed the apple;
"I'm jelly," cried the grape.

They were all in jars and bottles
Upon the shelf arrayed,
And in their midst poor Mrs. Quince
Was turned to marmalade.

—St. Nicholas.

John Doyle—Matchmaker.

When Louise Doyle entered the offices of Delancey & Griffin, architects, in the humble capacity of copyist, the soul of her father rose in rebellion.

Two years previous John Doyle had retired from the grocery business with a tidy income, a substantial brick residence and chronic rheumatism. Whenever the malady loosened its grip, Doyle wandered back to the scenes of his commercial achievements. His successor always gave him cordial welcome, and a comfortable chair back of the cashier's booth was at his disposal. When too lame to walk as far as the store, he consoled himself by playing innumerable games of penuchle, in the rear of Simpson's cigar store, just across the street.

It was from a disastrous defeat at penuchle that he came home to hear that Louise was "going to business." The moment was inauspicious.

"I never heard tell of such tomfoolishness. My girl going to chase downtown six days in the week, like the daughters of that no-account Tom Saunders? People'll be questioning my credit next. And she won't make enough to pay for the new feathers and fixing she'll want, to say nothing of the shoe leather she'll wear out traipsing back and forth in all kinds of weather!"

Mrs. Doyle, who, in spite of the fact that she never joined a Mothers' club nor studied household economics, had succeeded in making John Doyle comfortable and contented, calmly set a gusset in her husband's new shirt as she replied:

"I don't know about that, John, I think that if more girls knew how hard it is to earn money, and to make a success in business, we'd have fewer shiftless and grumbling wives."

Mr. Doyle groaned at his wife's desertion to the enemy.

"And as for wasting her money, I don't believe Louise'll do anything of the sort. She's got too much of her father's blood in her. Besides, she's going to pay her board—says it's only right, seeing that she won't be home to help me with the work."

Mr. Doyle fairly gasped in his fury. "Pay her board! Minerva Doyle, have you gone daft? Or are you turning miser, like your Uncle Sam? My daughter shan't pay her board, so long as I'm here to prevent it.

But Louise had her way. Every Saturday night she paid her board, and every Monday morning Mr. Doyle carried the money straight to the savings bank and deposited it to the credit of Louise Doyle.

Three years rolled around and Louise failed to fulfill any of the dire predictions set forth by her parent. She did not take pneumonia from facing keen northwesterners. She did not catch smallpox from riding in ill-ventilated cars. And she refused to elope with the junior partner. But she had risen steadily in the estimation of her employers, until, when George Shaw came to the city, she was confidential secretary to the senior partner of Delancey & Griffin.

In his secret heart, John Doyle was wonderfully proud of this self-possessed, capable young woman, and when young Shaw, from up-State, vigorous, well set-up and well-poised, appeared on the scene, Mr. Doyle groaned afresh.

"If Louise hadn't that business bee in her bonnet, there's the man I'd pick out for her husband. Why on earth any sensible girl would rather take dictation from a snarling, bald-headed old crank downtown than to make a nice home for a fellow like George Shaw, I don't see."

But as a matter of fact, Mr. Delancey was neither bald nor ill-tempered, and George Shaw had come to the city with but one well-defined ambition—to gain a business foothold. John Doyle's successor in the grocery trade being second cousin to George Shaw's mother, he had taken the first thing at hand, a position as clerk in the store where Doyle had once ruled with an iron hand.

Perhaps the happiness of Louise was not the only thing at stake in Doyle's mind. He might have cherished a secret longing to maintain even a distant family connection with the scene of his commercial success. At any rate, Mr. Shaw was in due time invited to call, and Mr. Doyle fairly hugged himself when he saw the admiration in the young man's eyes on meeting Louise.

But for six months matters progressed no further. Mr. Shaw called at irregular intervals, and was courteously received by Louise—in the presence of her parents.

From his point of vantage behind the cashier's booth Mr. Doyle studied the young man whom he coveted as a son-in-law, and decided that an occasional cigar could be offered his idol with impunity. In the meantime George Shaw was studying the uncertainties of customers and markets, to the profound satisfaction of his mother's second cousin.

When Mr. Shaw invited Louise to accompany him to the theater, John Doyle went into the seventh heaven of delight. The calmness of Louise irritated her exuberant father.

The theater-going became an established weekly event, and Mr. Doyle beamed, even when defeated at penuchle. Each day he spent less time in the rear room of Simpson's cigar store, and longer visits were made to the grocery store. He bought a better brand of cigars, too, and proffered them at more frequent intervals.

But when Louise imperturbably announced that Mr. Shaw had invited her to see Bernhardt in "L'Aiglon," and followed up the information with the prosaic observation that her rainy-day skirt needed a new binding, the vials of Mr. Doyle's wrath were again uncorked. As the door closed on her retreating form, he turned to his wife.

"Well, that beats me! I'll bet George paid every cent of \$25 for those two seats, and she takes it as cool as if she was used to such seats every night in the week. I do believe she's more interested in Delancey's contract for that Newport palace than in getting a husband."

"Like as not," responded Mrs. Doyle, gathering the butter scraps for the cooking jar. "An architect's contract is easily filled, but marriage is uncertain and it's got to stand for most of us. I don't see that there's such a rush about her settling down. She's doing well. Besides, how do you know that Mr. Shaw wants her?"

"Want her!" roared Mr. Doyle. "Who wouldn't want her? Ain't she pretty? Ain't she bright and up to the mark every time? Ain't I got money to leave? Ain't she as cool as a cucumber, too, the independent minx?"

A week after the Bernhardt episode John Doyle came home fairly brimming over with excitement.

"What do you think? George has bought an interest in the store. Had a tidy bit of money laid by when he came down here, and, seeing that this was a good opening, bought in. Everybody around the store is tickled to death. Say, I invited him around to dinner Sunday to celebrate the occasion."

Mrs. Doyle smiled.

"That's nice."

Louise likewise smiled placidly—and passed her plate for another chop. John Doyle boiled inwardly.

"Don't care a rap. This comes of letting her work among a lot of counter-jumpers and upstart young brokers. She don't know a real man when she sees one."

The next night Louise dined with two young women who lived in true Bohemian fashion, in two rooms with a bath. She came home animated and gossipy.

"Oh, mother," she exclaimed, as she folded her new veil with thrifty care, "it's the dearest little den. The parlor couches are their beds at night, and inside there's a place for their gowns. And such a cute dinner—with a fern in the middle of the table, and everything so easy to get—canned soup, fried chicken and salad and things from the delicatessen store, and rolls heated in the gas oven, and charlotte russe, with the queerest black coffee and preserved sweets from India to finish off. No two dishes alike and each one with a history!"

Mrs. Doyle patted the two slender hands that stole around her neck.

"We had a good dinner, too, dearie, roly-poly pudding with strawberry jam."

"Not strawberry jam," sighed Louise. "Naughty mother, not to wait till a night when I was home. I've been thinking that when Mr. Shaw came Sunday we might have something out of the ordinary, just to celebrate the occasion." This with a sly look at her father.

"To be sure," responded Mrs. Doyle, heartily. "The poor fellow has boarded ever since he came to town. No doubt he'll enjoy some good home cooking. We'll have a fine roast of beef with both kinds of potatoes, celery and vegetables, and I'll make some extra mince pies."

Louise tapped the table thoughtfully. "I know, mother dear, you're the best cook in the world, but—don't you think it would be nice to have some little extras like—well—like the girls had to-night?"

"Bless my soul," remarked Mrs. Doyle, wiping her glasses, anxiously, when Louise left the room. "Whatever does she want, I'm sure—"

"Never mind what she wants, she's going to have it," growled Mr. Doyle, in unconcealed triumph. "That's the first ray of sense she's shown since George's been coming here. Let her buy what she wants for Sunday."

In fulfillment of this injunction, he pressed a ten-dollar bill into his daughter's hand, bidding her spend it for anything she liked for the momentous occasion. And when the two young people had retired to the parlor, after dinner on Sunday, and he was exuberantly wiping the dishes for his wife, he remarked:

"Well, Minerva, that dinner'll do one or two things for George Shaw. It'll either kill him or make him propose."

"I declare, John Doyle, I believe you've gone daft on the subject of marrying off Louise. But I must say that I do feel a bit squeamish myself after those iced oysters."

The next morning after breakfast Louise lingered over the task of tying her veil and rebutted her gloves nervously. Finally she crossed abruptly to her mother's side and rested one hand caressingly on the gray hairs.

"Mother, I guess you'll have to teach me how to roast beef your way. George—" Mr. Doyle started and his paper fell to his knees. "George never—never—mentioned the salad nor the charlotte russe, nor anything I bought, but he said your beef and pies made him think of his mother—and—and when we go to housekeeping we're to have roast beef every Sunday."

Mrs. Doyle wheeled around to clutch at empty air. Louise had vanished and the front door swung to with a crash.

"Well, John Doyle, I hope you're satisfied," she exclaimed, a kind of a suggestion of tears in her voice.

"Satisfied ain't no name for it, Minerva. If I'd had him made to order I couldn't have got a son-in-law to suit me better."—New York Sun.

The Uses of "Adhesive."

A clever woman once remarked that there was almost no domestic dilemma that could not be solved with brains and a hairpin. To these time-honored weapons the housewife has lately added a third, and now she can face the forces of disorder and disaster with an absolute certainty of success.

In the first place it is invaluable for hanging light pictures, posters, tapestries, etc., on hard-finished walls. In many institutions and office buildings it is positively forbidden to drive tacks into the walls, and the use of a wire and picture moulding is either impossible or impracticable. Try adhesive, girls, who long to adorn your walls at boarding school with the small photographs in which your hearts delight; and when you get tired of the pictures or wish to move them, all traces of the rubber strapping may be instantly removed by means of a few drops of benzine or naphtha.

Then, when you get ready to go home for your vacation, and have many boxes to confide to the expressman or to store, what could be neater or more convenient for fastening on the card of identification than a little strip of the ever-ready adhesive attached to either side of the card?

Or perhaps your tooth is aching, and your faithful friend, the hot water bag, which has never failed you before, has chosen this inopportune moment to spring a leak. Again try adhesive and you will almost forget your toothache in your delight at the neat little patch you have applied.

Glass bottles and tin cans which often utterly refuse to hold any label that is introduced to them through the medium of paste or mucilage become suddenly docile when tagged with a bit of adhesive. Try it, you housewives who have never been able to mark the tin pails and boxes in your kitchen pantry, and you will no longer be obliged to taste in order to distinguish the soda from the powdered sugar.

As a bandage fastener adhesive is without a peer. This is, indeed, its orthodox use, and belongs to the province of the surgeon. But it is sometimes necessary for the uninitiated to dress a burn or a boil where it is very painful to apply sufficient pressure over the bandage to hold it in place. Paste down the edges or ends with strips of the rubber plaster, and hear what the sufferer will say.

When the doctor leaves medicine in a glass, and you have sense enough to know the importance of keeping it closely covered, cut a circle of cardboard a trifle larger than the top of the glass and fasten it on with hinges of adhesive. Then hear what the doctor will say about your ingenuity.

In many households where there are old persons or young children the presence of rugs on highly polished floors is a source of danger. These rugs may be easily kept from slipping by the application of a few bits of the rubber plaster to the under side, and if the floor is very slippery the adhesive may also be fastened to the soles of the shoes. This is done constantly in the orthopaedic wards of hospitals, and many a serious trouble does it prevent.

If your rubber overshoes develop a sudden hole, patch them with adhesive. It will also mend your umbrella, your cloth skirt and the crown of your felt

hat, not to mention the dilapidated back of your pet pocketbook, or the cracked side of your favorite jardiniere. If the thermometer hanging outside of your window dances a noisy jig to the tune of every high wind, bind it down with a strip of adhesive, which is proof against any weather.

This is only a beginning of the uses to which this article may be put. You will not have owned a spool of it for a week before you have discovered a dozen more, and you will wonder how you ever lived so long without the constant companionship of this friend that sticketh closer than a brother, but which is always ready to relax its gentle grip when urged to do so with a little benzine.—Woman's Home Companion.

Drugs in the Treatment of Insomnia.

As to the value of drugs in the treatment of insomnia, diversity of opinion exists among the prominent specialists in nervous affections. Some there are who hold that the giving of narcotics is greatly abused, while others contend that the employment of such means for producing rest to the mind and body is justified in the majority of cases, or, at any rate, that the physician should be the best judge with regard to the use of narcotics.

At a recent meeting of the British Medico-Psychological Society, Dr. Henry Rayner read a paper on the subject which gave rise to an extremely interesting discussion. Dr. Rayner, himself (Hospital, June 14) opposes strongly the custom of giving drugs for the purpose of producing sleep, and recorded his belief that a large amount of the nervous and mental disorders so prevalent amongst the well-to-do is due to the indiscriminate and injudicious use of soporific compounds.

Dr. G. F. Blandford takes an entirely different view, and from an experience of forty years stated that in cases of threatening insanity with insomnia as a marked feature, he felt as certain as he could feel of anything that a great number of these patients have been materially benefited by the use of medicines given to induce sleep. He further held that it was possible to give drugs in such doses to produce a state which was indistinguishable from natural sleep, but it was necessary to select the drug suitable to the case. He thought that the profession, as a rule, were inclined to give too large doses of sedatives, and to continue the same for an unnecessarily long period. Paraldehyde he considered to be one of the best and safest narcotics.

Dr. Savage, while allowing that sleeplessness was the predominant symptom of the day in all nervous and mental affections, said that before treating it was necessary to first ascertain the cause. In anæmia of the brain, concerning which so much was heard nowadays, he was certain that a nightcap of grog with a little food were more likely to produce sleep than sedatives of the opium type. Again, hydrotherapy in certain cases was of the utmost use with patients whose tissues were already loaded with toxic agents, who had taken too much alcohol, or were gouty. For persons in these conditions a dose of calomel, followed by salines and baths, was of great value in producing sleep, as well as in curing the patient of his malady. Where much pain was present opiates and other narcotics assisted in inducing sleep, and this was especially so in cases of mental pain, and though it was true that opium upset the digestion, the rest which it produced was the means of the digestion being in turn improved. Referring to the more extreme use of narcotics, Dr. Savage said that he had seen extremely mischievous patients narcotized into dementia, and on recovery from that condition get perfectly well. A morphomaniac could be given an ounce of bromide per day for several days and be found to have recovered at the end of that time.

Dr. Fletcher Beach said that in many cases of neurasthenia and brain fag little could be done unless sleep could be produced, and for this purpose he recommended the use of sulphonal, but he thought it was wrong to give nar-

cotics continually for weeks. Dr. Percy Smith urged that patients who could not sleep at night should be allowed to sleep whenever they felt inclined to do so, and in regard to the drug treatment of insomnia, said that he thought general practitioners had not yet fully realized that other drugs would produce sleep without the very bad effects of morphia.

The trend of the discussion seemed to veer in the direction of the use of narcotics, when employed intelligently and with discretion. Dr. Julius Mickle gave the key to the situation when he said that sleep-producing drugs should be administered with brains.

Latterly, there has been somewhat of a hue and cry with respect to the prescribing of narcotizing mediums by the medical profession. The charge has been made more than once, that the physician has been in many instances responsible for the moral, mental and physical ruin of individuals through his zeal in recommending opiates for the relief of insomnia, of acute pain, and of various forms of nervous disorders. While this may be true to some extent, a careful scrutiny would probably show that the situation so far as the acts of the physician are concerned has been greatly exaggerated. Narcotics are sometimes absolutely indicated; indeed, there is no other way known of successfully treating certain phases of mental and nervous affections. The first thing to do is to diagnose correctly, and then, if necessary, to prescribe narcotics with due discrimination. Dr. Savage's remarks with respect to the efficacy of hydrotherapy and aperients in the treatment of alcoholics or of those whose systems were loaded with toxic agents were much to the point.—Medical Record.

DOMESTIC ECONOMY.

Hints to Housekeepers.

Lamb can be used in nearly every recipe given for beef. It is especially good for croquettes and makes a savory stew. Save every drop of liquid or gravy from the platter when setting a roast of lamb away. It requires all the enriching it can have and always plenty of seasoning.

This is the time when preparing rough floors for impromptu dancing is frequently needed. Nothing is better for the purpose than paraffine. It should not be cut off in small bits, as is often done, but grated from a coarse grater evenly over the entire floor, afterwards rubbed in by having the floor shuffled over by two or three persons. A dance or two will complete the operation, and, given any sort of decent boards to work upon, the result will be entirely satisfactory.

If occasion demands ice cream when no milk or cream is attainable, the favorite American dainty may still be had by letting butter and water take the place of the usual ingredients. Wash a large tablespoonful of hard butter free from salt. Cream together the yolks of three eggs and one cupful of sugar, add the butter and two cupfuls of water and scald the mixture in a double boiler.

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When it is near the boiling point remove from the fire and cool. Then add the whites of the eggs, two tablespoonfuls of lemon juice and the grated peel of half a lemon, and freeze.

Stale cake, especially sponge cake or ladyfingers, may be converted into delicious puddings. Where the pudding is to be steamed or baked, cut the cake in fingers or break it into crumbs. If the pudding is to be soaked with wine, have a custard, fruit juice or cream poured over it. Cut in slices. Reject icing when preparing a pudding; it generally makes a pudding sweeter than desirable. A good plain pudding is made by putting slices of the stale cake in a steamer, and, when moist, serving with a spoonful of strawberry or marmalade sauce. It may be covered when cold with hot stewed berries and served with cream. Stale sponge cake serves as a foundation for charlotte russe and cabinet pudding, or, if steamed, may be covered with strawberries and whipped cream, when it makes an excellent imitation of strawberry shortcake.

Domestic Hints.

WINE WHIP.—One or two cups cream, one or one-half cup white wine, grated rind of one lemon, whites of one or three eggs, sugar to taste. Whip the cream and eggs separately until both are stiff. Sweeten the cream and add the wine and lemon rind to the eggs. Beat the eggs into the cream briskly, and as the froth rises remove it and place in punch glass. Serve ice cold. The whip is sometimes served on cracked ice placed on the bottom of the glass.

CREAM OF BARLEY SOUP.—Put into a saucepan two ounces of butter, and when very hot add four ounces of well cleaned pearl barley; heat it, then moisten with four quarts of broth; cover the saucepan and cook the barley slowly for three hours or more, until it yields easily to the pressure of the finger, then drain and pound in a mortar, diluting it with its own stock, afterwards straining through a sieve. Return it to the fire, and in case it should be too thick add more of the broth; stir continually with a spatula, bearing on the bottom of the saucepan until the soup is ready to boil; season with salt, sugar and nutmeg, and add the thickening to the soup, stirring it in well until all the butter is melted.

TOAST.—Trim the crusts from stale slices you wish to toast and move it carefully over a clear red fire for two minutes. Then turn it over and let all the moisture be drawn out of the bread. Butter and serve immediately. Toasts may be utilized, especially for breakfast, in all sorts of ways. Plain toast is a favorite in most households, then there is milk toast, cream toast, dropped eggs on toast, water toast, and the excellent dish of bread soaked in egg and milk which has all sorts of names, French, Spanish, German and Scotch toast, but more properly egged toast. At the luncheon and dinner table toast appears in all forms, under chicken and with such vegetables as asparagus and spinach, under minced meats, fricassees and cream mixtures or in the delicate canape.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Aug. 27, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	69 3/4 @ 70 1/4	66 1/2 @ 67 1/4
Thursday.....	70 1/4 @ 72	67 @ 68
Friday.....	70 3/4 @ 72 1/4	67 1/2 @ 68 1/4
Saturday.....	71 @ 72 1/4	67 3/4 @ 68
Monday.....	71 1/4 @ 72 1/4	67 3/4 @ 68 1/4
Tuesday.....	72 3/4 @ 71 1/4	68 1/4 @ 67 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	32 3/4 @ 33 1/4	29 3/4 @ 30 1/4
Thursday.....	33 3/4 @ 34 1/4	30 1/4 @ 31 1/4
Friday.....	33 @ 34 1/4	30 @ 31 1/4
Saturday.....	33 @ 34 1/4	30 @ 31 1/4
Monday.....	32 3/4 @ 33 1/4	30 3/4 @ 31 1/4
Tuesday.....	33 3/4 @ 33	31 @ 30 3/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 13 1/4 @ 1 13 1/4	\$1 16 @ 1 15 1/4
Friday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ —
Saturday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ —
Monday.....	1 13 1/4 @ 1 14	1 16 @ —
Tuesday.....	1 13 1/4 @ 1 13 1/4	— @ —
Wednesday.....	1 13 1/4 @ 1 13 1/4	1 15 1/4 @ 1 15 1/4

WHEAT.

There is not much wheat going abroad at present from California, but this is not due to lack of demand. Shippers and millers, as well as speculative operators, are in the market for wheat, and are bidding on the average fully as good figures as have been current any time during the past sixty days or since the new season fairly opened. One substantial reason for wheat not being sent afloat in very heavy quantity at present is that exporters are for the time being kept busy in forwarding barley to Europe to meet the urgent requirements for latter cereal. Wheat can be used to advantage the season through, but in the consumption of barley for malting purposes there are certain periods when the latter cereal is in most active request, and to reach Europe during the most busy time in the barley trade, shipments must be made early in the season. Wheat is not likely to suffer in consequence of the light outward movement now being experienced. On the contrary, it may be benefited, as foreign markets have been stiffening, while ocean freight rates have been on the decline, two conditions very favorable and necessary for the development of firmness in the local wheat market. Latest charters of wheat ships show a marked decline from figures recently current. Ocean freight rates on wheat from this port to Europe are not now quotable over 23s 9d. This week one ship was let at 23 shillings, after having arrived under charter at 27s 6d. This means a reduction of over \$3,000 on a 3,000-ton cargo, or fully \$1 per short ton of 2,000 lbs., which can be added to the value of wheat on account of the drop in freight rates.

California Milling.....	1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside.....	1 12 1/4 @ 1 15
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 07 1/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	6s 0 1/2 @ 6s 0 1/4	6s 5 1/2 @ 6s 5 1/4
Freight rates.....	37 1/4 @ 40s	23 @ —
Local market.....	96 1/4 @ 1 00	1 13 1/4 @ 1 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On San Francisco Call Board prices for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.14 @ 1.13 1/2.
May, 1903, delivery, \$1.16 @ 1.15 1/2.
Wednesday, at regular noon session of Call Board, December, 1902, wheat sold at \$1.13 1/2 @ 1.13 1/2; May, 1903, \$1.15 1/2 @ 1.15 1/2.

FLOUR.

Business is of fair volume and at prices practically the same as have been current for several months past. Flour is going in the main at low figures, as compared with present cost to millers. Excessive competition in the struggle to secure trade is keeping prices for flour at existing levels. While no radical changes in flour values are looked for in the near future, such as may occur are almost certain to be in the upward direction.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35

Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

The same strong tone previously noted continues to prevail in the barley market, with an active demand, both on European and local account, but mainly for shipment. Competition is particularly keen to secure large lots of uniform and desirable quality, and for such offerings stiffer prices may be realized than are warranted as regular quotations. Demand for Europe is particularly active at present, so as to be able to get barley abroad in time for the principal malting season. Shipments of California barley for the past two months foot up close to 40,000 tons and are over 5000 tons in excess of our wheat exports for same period. Some of the newspapers which are more sensational than truthful state the present movement in barley is the most active on record. Their vision evidently does not extend very far. In 1899, only three years ago, over 50,000 tons went outward during July and August, being at the rate of more than 100,000 centals per week. Prices for export grades were then within 50c. per ton of the figures now ruling, but feed barley was at that time much cheaper, not being quoted over 85c. per cental. Freight rates to Europe three years ago were fully \$2 per ton higher than now.

Feed, No. 1 to choice.....	95 @ 97 1/4
Feed, fair to good.....	92 1/4 @ 95
Brewing, No. 1 to choice new.....	98 1/4 @ 1 02 1/4
Chevalier, No. 1 to choice.....	1 20 @ 1 30
Chevalier, common to fair.....	1 00 @ 1 15

OATS.

Business in this cereal has not been very brisk the past week, nor has the market shown much strength. Offerings are tolerably heavy and consist largely of rather ordinary qualities. Choice to select new, such as buyers naturally prefer to stock up with, are being held back to a great extent, while the more common grades are being urged on the market. To this fact is largely due the present absence of noteworthy firmness. Some old oats are being crowded to sale at reduced figures.

White Oats, fancy feed.....	1 20 @ 1 22 1/4
White, good to choice.....	1 10 @ 1 15
White, poor to fair.....	1 02 1/4 @ 1 07 1/4
Gray, common to choice.....	1 05 @ 1 12 1/4
Milling.....	1 15 @ 1 20
Surprise, good to choice.....	1 17 1/2 @ 1 22 1/4
Black Russian.....	90 @ 1 10
Red.....	95 @ 1 15

CORN.

The market shows the same inactive condition as previously noted. Stocks are too small, and prices are too high as compared with current values for other feed cereals, for much movement to be experienced. Present offerings are mostly Large Yellow, with the same principally in few hands.

Large White, good to choice.....	1 45 @ 1 50
Large Yellow.....	1 35 @ 1 40
Small Yellow.....	1 37 1/2 @ 1 42 1/4

RYE.

In quotable values there are no changes to record, but there are no evidences of any wholesale trading, either for shipment or on local account.

Good to choice.....	85 @ 90
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BUCKWHEAT.

None arriving and no particular inquiry at the moment. Quotable values remain nominally as last noted.

Good to choice.....	1 55 @ 1 70
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BEANS.

New crop beans are beginning to put in an appearance from Sacramento river section, but it will be several weeks before receipts will be likely to touch wholesale proportions. Producers are anxious to get to market as early as possible, particularly with Black-eyes, as these are apt to soon rule materially lower. Small sales of new Black-eyes have been effected at \$1.50. The market as a whole, however, is firm for this date. No great breaks in prices of other varieties are looked for. Large dealers are bidding \$2.25 in the interior for White beans and \$2 for Pinks.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 50 @ 2 50
Lady Washington.....	2 40 @ 2 60
Pinks.....	2 10 @ 2 20
Bayos, good to choice.....	3 00 @ 3 10
Reds.....	2 25 @ 2 50
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 75 @ 3 90
Black-eye Beans.....	— @ —
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Market is dull. Only Green Dried are at present offering in a wholesale way, and these are receiving virtually no attention. Some of prime quality for which \$1.50 was asked the past week failed to meet with custom. The market is virtually bare of

domestic Niles, there being none of these offering from first hands.

Green Peas, California.....	1 40 @ 1 50
Niles Peas.....	— @ —

WOOL.

There is as much business doing as could be reasonably expected, with the present quite limited offerings from first hands. Spring wool is practically all gone, and no great quantities of Fall clip have yet arrived. Demand is not lacking for good to choice wools, and the California Fall clip, or at least the desirable portion of the same, bids fair to meet with custom at full current rates about as rapidly as received. Market is firm at the quotations noted.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foot Hill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15
Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

The picking season is now on in the Sacramento Valley, and will be soon under headway in the Sonoma and Mendocino district. A few new hops have already arrived, but no heavy receipts are looked for until about the middle of September. Dealers are offering new at 20 @ 23c, but are not meeting with many buyers at present. Old hops are about out of stock, and are no longer quotable in a wholesale way. A New York review furnishes the following: "Interest now centers in the crop so soon to be harvested. Latest advices from this State show a variable condition of the yards in different counties; some localities are poor and will not yield more than one-third crop, while in other sections the outlook is better. Cool weather this week has not been favorable to a maturing of the hops and picking will probably be later than usual. Reports from England continue bad. Conservative people estimate the yield at 375,000 cwt., and some estimates run down to 360,000 cwt. The German crop is doing so well that prices are receding; offerings have been made to brewers again this week at 35c New York. There is talk that the yield will be 150,000 cwt. more than last year. The local market is without special features. Stocks are very small and firmly held, some holders asking more than we quote, —21 @ 26c for 1901 hops, as to quality, but brewers are working on stock which they bought much earlier in the season, and which is lasting better than was expected, owing to the cool summer."

HAY AND STRAW.

The market for hay is giving evidence of a little better tone than has been lately experienced. Receipts are on the decrease, but are still of quite liberal volume. Very little hay is arriving on consignment, much of it having been purchased in the interior by city dealers. Most of the crop is reported now housed, and it is claimed that seldom have the fields been so clean at corresponding date in previous years. This gives good prospects for a better market at an early date.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	6 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3 bale.....	35 @ 45

MILLSTUFFS.

Stocks of Bran and Middlings have shown some increase during the week, imparting an easier tone to the market, but no appreciable changes were established in quotable values. Prices for Rolled Barley were well maintained at last quoted advance. Tendency on Milled Corn was to easier figures.

Bran, 3 ton.....	19 00 @ 20 00
Middlings.....	22 50 @ 24 50
Shorts, Oregon.....	20 00 @ 22 00
Barley, Rolled.....	20 50 @ 21 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Little doing in this line and very little stock to operate upon. In quotations there are no special changes to record, but in the absence of any noteworthy trading, values for the time being are not very well defined. Especially is this the case as regards Mustard, spot stocks of which are of insignificant volume, and are not apt to show material increase the current season, the crop in this State being a failure.

Flax.....	2 25 @ 2 50
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Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 25

Canary.....	3 1/2 @ 3 1/2
Rape.....	1 1/2 @ 2
Hemp.....	3 1/2 @ 3 1/2

BAGS AND BAGGING.

Aside from a moderate movement in Fruit Bags and Wool Sacks, there is no noteworthy business doing at present in this department. Grain Bag market shows a weak tone. Quotable values throughout remain practically as last noted.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	6 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	6 @ 6 1/4
San Quentin Bags, 20x30.....	5 55 @ —
Wool Sacks, 4 lbs.....	30 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Dry Hides are in good request for shipment East, and are commanding, as a rule, full current rates. On account of most of the local tanneries being temporarily closed, Wet Salted Hides and Pelts are slow of sale and market is weak at the quotations. Offerings of Tallow are not neglected, there being good inquiry on shipping account.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	3 00 @ —
Salted Horse Hides medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 3/4 skin.....	80 @ —	1 00 @ —
Pelts, medium, 3/4 skin.....	50 @ —	75 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	40 @ —
Pelts, shearling, 3/4 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	6 @ —
Tallow, No. 2.....	4 1/4 @ —	5 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

Market is firm for both Comb and Extracted, under light offerings. The demand at full current values is not brisk, however, and is almost wholly on local account.

Extracted, White Liquid.....	6 1/4 @ 5 1/4
Extracted, Light Amber.....	5 @ 5 1/4
Extracted, Amber.....	4 1/2 @ —
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESWAX.

Values remain as last quoted, with market firm. Offerings are exceedingly light, both spot and to arrive.

Good to choice, light, 3 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is in fair request, with offerings not excessive and current values are being well maintained. Prices for Mutton continued practically as last noted, supplies and demand about balancing. Lamb arrived sparingly and sold to fair advantage. Veal was in light receipt, and such as was in desirable condition met with a firm market. Hogs were in fair receipt but market did not incline in favor of buyers.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 6 1/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/2 @ 6 1/4
Hogs, soft or corn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3 lb.....	8 @ 9 1/4
Veal, large, 3 lb.....	7 @ 8 1/4
Lamb, spring, 3 lb.....	9 @ 9 1/4

POULTRY.

There has been a decided improvement in the condition of the poultry market since last review, under decreased arrivals

of both domestic and Eastern, and a very good demand for most kinds in prime to choice condition. The principal inquiry, however, was for medium size to full grown Chickens, such selling to very fair advantage where they were in good flesh. Young Turkeys which were fat and full grown brought in a moderate way tolerably stiff prices.

Turkeys, dressed, choice.....	—@—
Turkeys, alive, choice young.....	18 @ 20
Turkeys, alive, Hens, # lb.....	15 @ 16
Turkeys, alive, Gobblers, # lb.....	15 @ 16
Hens, California, # dozen.....	4 50 @ 5 50
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	3 50 @ 4 00
Broilers, large.....	3 00 @ 3 50
Broilers, small to medium.....	2 25 @ 3 00
Ducks, old, # dozen.....	2 50 @ 3 00
Ducks, young, # dozen.....	2 50 @ 4 50
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 50 @ 1 75
Pigeons, old, # dozen.....	1 25 @ 1 50
Pigeons, young.....	1 25 @ 1 50

BUTTER.

Arrivals of fresh from the Humboldt district were of fair volume for this time of year, but were light from all other quarters. Values ruled much the same as preceding week, but only for choice to select did the market display firmness. Retailers are now running to a considerable extent on cold storage butter, supplies of which are liberal. Eastern creamery in tubs is offering at 20¢c. to arrive, and for Eastern factory or renovated stock 14½¢@18½¢c. as to quality is asked for carload lots.

Creamery, extras, # lb.....	23½¢@27
Creamery, firsts.....	24 @ 26
Dairy, select.....	24 @ 25
Dairy, firsts.....	22 @ 23
Dairy seconds.....	19 @ 21
Firkin, good to choice.....	20 @ 22½
Mixed store.....	17 @ 19
Pickled Roll.....	20 @ 23

CHEESE.

Buyers are not taking hold very freely at the advanced figures lately established. While the market is not quotably lower, there is an easier tone. To effect free sales at this date, moderate concessions would have to be granted. Eastern cheese can be laid down at about same figures now current on domestic.

California, fancy flat, new.....	11½¢@12
California, good to choice.....	10½¢@11
California, fair to good.....	— @ —
California, "Young Americas".....	11½¢@13

EGGS.

Market continues to be lightly stocked with choice to select fresh, and such are commanding in a small way from special custom fully as good figures as last quoted. But with this exception there is no firmness to record. Ordinary fresh are not much sought after, and have to come into close competition with cold storage eggs, stocks and offerings of which are quite liberal.

California, select, large, white and fresh.....	28 @ 29
California, select, irregular color & size.....	24 @ 27½
California, good to choice store.....	20 @ 23

VEGETABLES.

There were fairly liberal supplies of most descriptions, with the market in the main easy in tone, especially for other than most select qualities. String Beans which were too ripe to be desirable were in excessive supply and went at 50¢@75¢ per sack, while choice brought in a small way 3¢ per lb. from special custom. Choice Corn was not in heavy receipt and brought good average prices. Tomatoes arrived more freely than previous week and went at lower figures. Onions were rather steadily held, but movement in them was not brisk.

Beans, Lima, # lb.....	3 @ 3½
Beans, String, # lb.....	1½¢ @ 2½
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	60 @ 75
Corn, Green, Alameda, # crate.....	1 00 @ 1 25
Corn, Green, # sack.....	50 @ 1 00
Cucumbers, # large box.....	30 @ 50
Egg Plant, # large box.....	30 @ 60
Garlic, # lb.....	1½¢ @ 2
Onions, Yellow Danver, # cental.....	45 @ 60
Okra, Green, # box.....	50 @ 75
Peas, Sweet garden, # lb.....	2½¢ @ 3½
Peppers, Green Chile, # box.....	35 @ 60
Peppers, Bell, # box.....	35 @ 60
Summer Squash, Bay, # large box.....	35 @ 50
Tomatoes, River, # large box.....	25 @ 50

POTATOES.

There was a little better tone to the potato market, in consequence of a prospective reduction in overland freight rates to Texas points of 20¢ per cental, making the new rate 55¢. This is to enable California to compete with Colorado and Kansas in the Texas section. But as potatoes East are as low as 20¢ per bushel, the new freight rate will allow little if any over 40¢ per cental for potatoes here, unless prices East should harden. Business on local account was light and at generally unchanged values.

Burbanks, Salinas, # cental.....	45 @ 1 00
River Burbanks, good to select, # cental.....	35 @ 60
Early Rose.....	30 @ 40
Garnet Chile.....	50 @ 60
Sweet Potatoes, # cental.....	1 50 @ 2 25

The Fruit Market.

FRESH FRUITS.

Offerings of most kinds of deciduous fruits now in season were ahead of the requirements, particularly of common qualities, a large proportion of the offerings being under choice. Low-grade fruit was not only difficult to dispose of to advantage, but interfered more or less with the sale of first-class stock. Strictly high-grade fruit was more readily sold at extreme quotations or still higher figures than was some of the most ordinary stock at the lowest prices quoted. Apples were plentiful, with demand not very active and mainly for the best qualities. Very few apples are being shipped at present and dealers have little other than local trade to depend on. Bartlett Pears were mostly too ripe to be desirable for shipment. Such as were hard, of good size and free from defects, were salable to fair advantage, commanding in some instances slightly above quotable rates. Canners wanted mostly fancy 3-inch stock, and for such would probably have paid \$20 per ton, but it was difficult to obtain this sort in wholesale quantity at any figure. Peaches arrived freely, mainly in free boxes, and were fully as low as preceding week. Plums continued in much heavier supply than was warranted by the immediate demand. Figs showed increased receipts, with prices at a wider range than last quoted. Grapes were in better supply than at any previous date this season and quality showed improvement, but prices tended in favor of buyers. A few Improved Isabellas from Santa Cruz brought \$2.25 per crate. Zinfandels from Antioch sold at \$22 per ton. There was no scarcity of Melons of any sort, and they were offered at figures within the reach of all consumers. Berries of most kinds were in rather light receipt, especially Longworth Strawberries and Raspberries, market for these ruling firm.

Apples, # fancy, 4-tier box.....	85 @ 1 00
Apples, good to choice, # 50-lb. box.....	60 @ 75
Apples, common to fair, # 50-lb. box.....	30 @ 50
Apricots, Royal, # crate.....	— @ —
Cantaloupes, # crate.....	50 @ 1 25
Crabapples, # small box.....	25 @ 50
Blackberries, # chest.....	2 0 @ 4 00
Raspberries, # chest.....	8 00 @ 10 00
Figs, 1-layer box, 40¢@50¢; 2-layer.....	65 @ 1 25
Grapes, Fontainbleu, # crate.....	25 @ 50
Grapes, Muscat, # crate.....	40 @ 75
Grapes, Rose Peru, # crate.....	30 @ 60
Grapes, Seedless, # crate.....	35 @ 65
Grapes, Tokay, # crate.....	40 @ 75
Grapes, Zinfandel, # ton.....	22 00 @ —
Nectarines, Red, # box.....	30 @ 75
Nectarines, White, # box.....	30 @ 60
Nutmeg Melons, # box.....	25 @ 50
Peaches, # box.....	20 @ 60
Peaches, # basket.....	15 @ 30
Peaches, Cling, in bulk, # ton.....	15 00 @ 20 00
Peaches, Freestone, in bulk, # ton.....	10 00 @ 15 00
Pears, Bartlett, No. 1, 40-lb. box.....	40 @ 60
Pears, common, # box.....	20 @ 35
Pears, No. 1 Bartlett, # ton.....	10 00 @ 12 50
Plums, choice large, # box or crate.....	30 @ 50
Plums, # ton.....	6 00 @ 10 00
Plums, small, # box.....	15 @ 30
Prunes, Tragedy, # crate.....	25 @ 50
Strawberries, Longworth, # chest.....	7 00 @ 10 00
Strawberries, Melinda, # chest.....	3 00 @ 5 00
Watermelons, # doz.....	75 @ 2 50
Whortleberries, # lb.....	4 @ 6

DRIED FRUITS.

The market for cured and evaporated fruits is showing as a whole a quiet state, dealers claiming that early deliveries have been in the main provided for, leaving them free as a rule to operate or not, as seems best to them. Market for Apricots presented a steadier tone, with no changes in quotable rates, but purchases more difficult to effect at noteworthy concessions than was the case a week or two ago. The fresh Apricot season is ended and there will be little of this fruit to be dried after this date. There is little probability of values for Apricots ruling lower from this time forward, and some appreciation in prices may be experienced, more particularly for most desirable qualities. Apples are quotably lower, and there is no firmness to the market at the decline. For spot offerings of choice Evaporated 6½¢ is now a quotable extreme, and for best sun-dried 5¢ is more of an asking than an obtainable figure, except in a small way. Eastern Apple market is lower for futures, prime New York being quoted at 6½¢ for November and 6½¢ for January. In Peaches there is little at present doing. Dealers as a rule are not bidding over 4½¢ at primary points for good average stock, while producers generally are contending for better figures. Nectarines are receiving some attention at 4¢@4½¢. Spot offerings of Pears are looked for in quotable quantity the coming week. Futures on Pears are lower, October deliveries being now quoted at 4¢@6¢ for prime to choice and 6½¢@7¢ for fancy. There is considerable stir in the Fig market. In a fight among packers prices to growers in the Fresno district were jumped from 2½¢ to 3½¢. Packers are quoting Figs to Eastern buyers, f. o. b. Fresno, at 55¢@75¢ per 10-lb. box, as to grade, 10 bricks to box, but will not allow over 10 per cent. of or-

ders to be of the lower grade or 2-crown stock; choice White Figs, loose, in 50-lb. boxes, are quoted at 4¢ per lb.; cooking figs or culls in 50-lb. boxes, 2½¢ per pound. Business in Prunes for future deliveries is of moderate volume, but almost wholly at present in districts outside of Santa Clara, on 2½¢ basis for the four sizes, ½¢ premium for large. Santa Claras are firm at 2½¢ for the four sizes, ½¢ premium for large, dealers not caring to short the market to any great extent at these figures.

EVAPORATED OR BLEACHED.

Apples, 50-lb. boxes, rings, pressed, good to choice.....	6 @ 6½
Apricots, Moorpark.....	6½¢ @ 8
Apricots, Royal, good to choice, # lb.....	5 @ 6
Apricots, Royal, fancy.....	6½¢ @ 7
Nectarines, # lb.....	4 @ 4½
Peaches, unpeeled, choice.....	4½¢ @ 5
Peaches, peeled, in boxes.....	— @ —
Plums, Black, pitted.....	4 @ 5
Plums, Red and Yellow.....	5 @ 6
Prunes, Silver, good to fancy.....	3½¢ @ 6

COMMON SUN-DRIED.

Apples, sliced.....	4 @ —
Apples, quartered.....	3½¢ @ —
Figs, White, in bulk.....	3 @ 3½
Figs, 10-lb. box, 1-lb. cartons.....	30 @ 60
Figs, Black, in sacks, # lb.....	2½¢ @ 3
Peaches, unpeeled.....	— @ —
Pears, prime halves.....	— @ —
Plums, unpitted, # lb.....	1½¢ @ 2½

RAISINS.

Stocks of old are of very small proportions and will be likely all wiped out before new come upon the market. Prices for new are yet wholly undetermined. Sultana and Thompson Seedless are expected to rule less in sellers' favor than last season, owing to heavier foreign crop of Sultanas.

CITRUS FRUITS.

There are moderate supplies of late Valencia oranges on the market, and a fair business doing in them for this advanced date, values remaining quotably about the same as preceding week. Lemons of high grade received considerable attention, but offerings were ample and prices remained as before. Limes were in increased supply and market for that fruit was easier.

NUTS.

The almond market is quiet, without being quotably lower. The recent sharp advances in asking figures is checking the inquiry, although foreign markets continue strong. New crop Tarragonas can not be laid down in New York under 12½¢, duty paid. In new crop walnuts nothing has yet been done in the way of establishing prices.

California Almonds, shelled.....	16 @ 20
California Almonds, paper shell, # lb.....	11 @ 12
California Almonds, soft shell.....	8 @ 10
California Almonds, hard shell.....	5 @ 6
Peanuts, California, fair to prime.....	4½¢ @ 5½
Peanuts, Eastern, hand-picked.....	6 @ 6½

WINE.

The wine market in this center shows much the same general condition as previously reported. There is little of last year's product now offering from first hands. Dry wines of last year's vintage are quotable nominally at 20¢@25¢ per gallon wholesale. Grapes remain quotable at \$20@\$25 per ton for good to choice northern for dry wines, and \$12@\$16 per ton for southern stock for sweet wines, top figures being for choice black and lowest quotation for second crop Muscat. There is a fair movement of wine outward, mainly of blended stock. Shipments by sea for the week include 72,734 gallons per steamer to New York and 6650 gallons to Tahiti.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	160,957	904,117
Wheat, centals.....	67,193	634,913
Barley, centals.....	380,326	1,030,791
Oats, centals.....	18,130	105,048
Corn, centals.....	1,893	8,868
Rye, centals.....	—	39,604
Beans, sacks.....	3,067	27,541
Potatoes, sacks.....	21,899	177,083
Onions, sacks.....	5,676	31,773
Hay, tons.....	4,809	34,971
Wool, bales.....	1,610	9,630
Hops, bales.....	—	31

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	102,428	592,508
Wheat, centals.....	128,572	581,761
Barley, centals.....	334,713	685,068
Oats, centals.....	16	6,185
Corn, centals.....	—	4,802
Beans, sacks.....	264	2,521
Hay, bales.....	16	16,746
Wool, pounds.....	64,885	218,738
Hops, pounds.....	194	3,191
Honey, cases.....	28	85
Potatoes, pack's.....	236	10,086

California Dried Fruit at New York.

NEW YORK, Aug. 27.—Evaporated apples, com-

mon, 8¢@10¢; prime wire tray, 10½¢@10¾¢; choice 11¢@11¼¢; fancy, 11½¢@12¢.
California Dried Fruits.—A fair business doing at rates quoted, with spot offerings rather light.
Prunes, 3½¢@7½¢.
Apricots, boxed, 6½¢@9½¢; bags, 6½¢@7½¢.
Peaches, unpeeled, 9¢@10½¢; peeled, 12¢@16¢.

Proof against

P. & B.

Fumes & Vapors

P & B Paint protects the wood, stone and metal from fumes, vapors, gases, sulphur smoke, heat, cold and dampness. These splendid qualities make this paint invaluable for use in and about smelters, acid using works, etc.

P & B Paint comes in cans ready to apply without any heating, mixing, or stirring.

Send for Booklet. 9

Paraffine Paint Co.

116 Battery Street, S. F., Cal.
312 W 5th St., Los Angeles, Cal.
Pioneer Block, Seattle, Wash.

PATENTS

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, our Washington branch which tends exclusively to our business before the Patent Office, intimate acquaintance with the subjects of inventions in our own community, and our most extensive reference library, containing official American reports since 1790, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'s Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We are conservative and counsel preliminary examinations in cases of doubtful novelty. Guide to inventors sent on request.

DEWEY, STRONG & CO.

(ESTABLISHED 1860.)

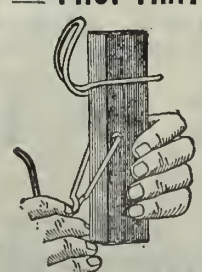
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—AND—

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They are to the wooden fruit prop what the clothespin is to the clothesline. They grasp the prop by the prong points and form a crutch that holds the limb firmly but as gently as if held by hand.

Be sure you get Woodward's adjustable prop bracket. The only one that adjusts itself to any prop or cottonwood pole. Cost 2¢ each.

and never wears out. Ask your hardware dealer.
J. K. Woodward & Co, 860 Vine-st Riverside, Cal.

Adown-to-date CATALOGUE

Every horticulturist should have it. 40 pages of new information and details about

Citrus Trees

that grow and are true to name. These nurseries are headquarters for Citrus Trees.

We have pleased hundreds of others and have stock that will please you, therefore

WE WANT YOUR TRADE.

Remember! This valuable book is FREE. Send for it to-day.

R. M. TEAGUE, (Etab. 1890.)
San Dimas, Los Angeles Co., Cal.

Fine Income Proposition.

Level tract of 400 acres finest soil in Napa county; near Napa City; railroad runs through the place; fair improvements and all fenced; income last year \$2665 and only half the land cultivated; price \$10 per acre; adjoining land of same value sells at \$50 to \$75 per acre; must be sold account non-resident owners.

McAFEE BROTHERS,
108 Montgomery Street, San Francisco, Cal.

AN ACRE OF CORN

and its possibilities under the silage system—being the theme of

"A BOOK ON SILAGE"

By Prof. F. W. WOLL,

of the University of Wisconsin, neatly bound into a volume of 195 pages and now being sent out by the SILVER MFG. CO., SALEM, O., is unquestionably the best book yet introduced on the subject. It includes:

- I—Silage Crops.
- II—Silos.
- III—Silage.
- IV—Feeding of Silage.
- V—Comparison of Silage and other Feeds.
- VI—The Silo in Modern Agriculture.

and many valuable tables and compounded rations for feeding stock. They are going rapidly.

To avoid disinterested inquiries the Price is 10c. coin or stamps.

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Sharples "Tubular" Dairy Separators

the latest product of the world's leading Cream Separator manufactory.

HIGHEST PRIZE (KNIGHT'S DECORATION) AWARDED AT PARIS.

No disks to bother with and wash. Are very easy turners.

Guaranteed to produce enough more butter than the best competing separator to pay 6% on whole first cost of machine each year. Five sizes—\$50 to \$200 each.

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CALIFORNIA'S LARGEST NURSERY

"When ye hae naething else to do stick in a tree. It will be growing when ye're sleeping."

We are the originators and growers of the famous

Calimyrna Fig

trees, and agents for the world renowned F. Richter, (Montpellier, France),

RESISTANT Grape Cuttings

We are also large growers of resistants. Orders taken at any time. Correspondence solicited. 800 acres of nurseries.

Send 4c. For large illustrated lithographed catalogue of deciduous, citrus and ornamental trees, grape vines and rose bushes.

FANCHER CREEK NURSERIES
GEO. C. ROEDING, PROP.
Box 18, FRESNO, CAL.

THE FIELD.

Pasture Value of Johnson Grass.

TO THE EDITOR:—I read with much interest those long articles in the PACIFIC RURAL PRESS on Johnson grass, but with almost bated breath, lest they would wind up and not tell if it was good for anything.

I bought twenty acres in alfalfa not long ago, also pretty well set in that grass. I wanted that particular piece of land, and after finding the grass on it I hesitated for some time and talked with many people on the subject. Some said that if I wanted the land only for grazing it was no detriment. I would not plow up good pasture to plant gold, or even prunes. Some were undecided, but the fellow who wouldn't have a gold mine on his land, if he knew he could not get it off, to plant prunes, was, of course, very radical. Some said it made fine hay, and others said that a good crop of grain could be raised in it, and I have the grass and roots to boot. Then I found a near-by piece, demonstrating that it seemed to be little or no hindrance to grain, and hogs loved the roots. So I bought it. The alfalfa was tall and in bloom and the grass was in head, some feet taller. I turned in seventy cattle and was pleased to see them take the grass first, and for two years now my stock have kept the grass shorter than the alfalfa.

In three dry years, when I did not have water to drown the gophers, I lost about eighty acres of alfalfa. And now I am almost at the point of planting these same acres to Johnson grass. I was among the first to plant a little of it, and I have dug as deep as 22 inches to get rid of it. But I have about changed my mind, and think strangely of the fellow who wants to get rid of the best thing he ever had, simply because he can't. I could write pages in its favor, and feel as if I could hardly exaggerate. And yet I can hardly believe my own experience, and would remind all that rash conclusions on the farm are to be feared, and they should take this with a grain of salt. But I believe that if you have Johnson grass there is no danger that moth nor rust will corrupt nor gophers break through and steal. Only this week a man told me it makes a "most wonderful hog ranch." And hogs beat nothing. If it has other friends I wish they would speak, so I could make up my mind whether to plant more or not. But the fellow who wants to get rid of it simply because he can't has said too much already. Or has it changed its taste, or has stock got accustomed to it? If so, how about calves and young stock that take to it so greedily? Or is it with them as of old, when it was said of the children that "the fathers have eaten sour grapes and the children's teeth are on edge?" They are bred to it. I like to chew a bit of the root, and last spring, while loading some to haul to my stock from a neighbor's, who was digging it up, I got hold of a joint that was sweet and tasted pleasant; but I was moving about and did not know where I got it, and have worried so much that I did not find and plant it. If we could have such sweet-rooted Johnson grass as that was, hog men would be fixed.

I wonder if the new creator, Mr. Burbank, could not make some? Some loads I scattered to the stock, but one large load of a ton or so I put in one pile on a Bermuda grass spot, thinking if the cows did not eat it when it got dry I would burn it to kill the Bermuda. The cows were well fed at the time, but they rustled and shook the dirt off those roots, slept on them and did their worst on them, but gained in milk, and if they left a joint it was hard to find. This is not to people who are sure of water to keep gophers down. But I miss my guess if a few years don't find all stock raisers planting it.

Visalia. H. E. DYE.

Deep down in country well and city water main are the seeds of dysentery and cholera morbus. Do not let them multiply in your body. Take Perry Davis' Kidney and Bowel Regulator to trouble you. It always cures.

What You Can Learn at the University Short Course.

Last week we gave a general statement about the short course in agriculture at the State University, which all our readers (both sexes and seventeen years of age and upward) are invited to take part in, with no charge for tuition. The dates will be from October 7 to December 18—ten weeks. The following is a brief statement of the courses of instruction offered:

Physics and Chemistry of Soils.—Prof. Hilgard and Loughridge: A short course of lectures on the nature, classification and cultural treatment of soils, with especial reference to California conditions.

Fertilizers.—Prof. Shaw: A brief discussion of the rational use of plant food as adapted to California conditions.

Grasses and Forage Plants.—Prof. Wickson: Sketches from a practical point of view of the conditions affecting the growth of grasses and forage plants in California, the species which have shown special adaptation and value to the different regions, and suggestions concerning their culture.

Sugar Beet Culture.—Prof. Shaw: A discussion of the adaptability of soils, and the methods of irrigation in the production of the sugar beet.

California Horticulture.—Prof. Wickson: A discussion of the commercial products of fruits, vegetables and flowers, their varied requirements, culture methods, and promise as lines of investment.

Plant Propagation.—Mr. Stubenrauch: The technique of propagation practices, especially seeding, budding and grafting. Lectures and practical work.

Viticulture.—Mr. Twight: The methods of establishing and maintaining a vineyard, with especial reference to California conditions.

Economic Entomology.—Prof. Woodworth: The insects affecting the fruit interests in California.

Entomological Laboratory.—Prof. Woodworth: The methods of collecting, preserving and identifying insects, and the use of the microscope.

Milk and Its Products.—Prof. Anderson: These lectures will take up a discussion of the secretion and composition of milk; the principles of the Babcock test and other milk tests; fermentations in milk and their control; principles and objects of pasteurization; various methods of separating cream from milk; cream ripening and use of starters; churning and working butter; cheese making and curing; scoring butter and cheese, and such other subjects as pertain more or less closely to the manufacturing of milk products.

Practical Dairy Work.—Opportunity will be given, as far as practical, for short course students who desire to do some of the work in butter and cheese making, but they will be required to provide themselves with suits and pay the fee required in that course.

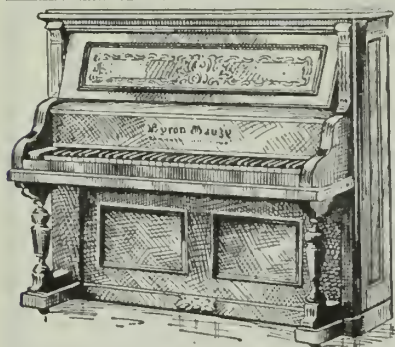
Dairy Bacteriology.—Dr. Ward: Lectures, text book work, and demonstrations concerning the various kinds of bacteria which are of importance to dairying.

Dairy Chemistry.—Prof. Shaw: The aim of these lectures and demonstrations is to give the student an intelligent understanding of the nature of chemical action in its relation to the souring of milk, cream ripening, and the manufacture of butter, cheese, etc.

Feeding Farm Animals.—Prof. Anderson: A course of lectures and recitations embracing the principles of nutrition; their relation to animal life for producing meat and milk; composition and digestibility of foods; concentrated foods and their value; how to compound rations, and balanced vs. unbalanced rations.

Breeds and Breeding.—Prof. Anderson: The principles of breeding animals, with a discussion of heredity, variation, in-and-in breeding, etc., and the various breeds of dairy cattle, as to their history, characteristics, and adaptability to various conditions of land and food.

Veterinary Science.—Dr. Ward:



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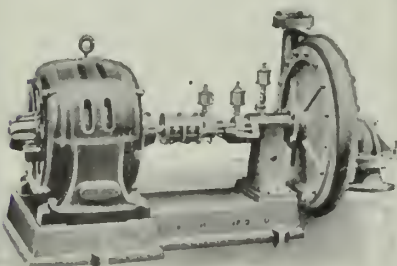
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Byron Mauzy,

308-310-312 Post St., San Francisco.

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Capacity up to 100,000 gallons per minute.

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Smokeless for Shotgun and Rifle, Black Sporting, Mining and Blasting.
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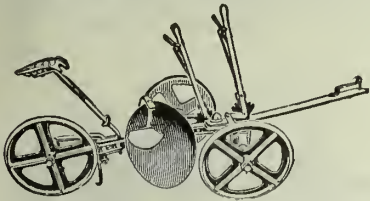
These lectures will include a brief discussion of the anatomy and physiology of domestic animals and the diseases to which they are subject. Especial attention will be given to the methods of prevention and control of tuberculosis, Texas fever, anthrax, hog cholera, and other important diseases of farm animals.

Board and lodging may be obtained in private houses in Berkeley for from \$18 to \$30 per month, and the accommodations are ample. The University provides neither room nor board.

For further particulars address E. J. Wickson, Professor of Agricultural Practice, Berkeley, Cal.



Large capacity is a point emphasized in the advertisements of all hay press manufacturers. J. A. Spencer, a hay press manufacturer of Dwight, Ill., makes this claim and proposes to make a test and establish its truth as a condition precedent to a sale. In his catalogue he says in regard to one of his presses that if any purchaser desires, he can demand a contest, and if it falls to bale three tons in a day than any other horse press not forming a larger bale; the purchaser need not pay for the press. The two presses mentioned in the advertisement running in our columns, the Hercules and Alligator, are box presses. Herewith is a cut of the Alligator Press. Readers interested in the hay baling business might send to Mr. Spencer for his catalogue.



The new Benicia-Hancock disc plow put out during the past season proved to be an unqualified success. In view of past failures on the part of Eastern manufacturers, the Benicia Agricultural Works may feel proud of their product. More were sold than anticipated, for the public had begun to think that the disc did not make a good plow. It is safe to assert that no disc plow can be a success unless made under the Hancock patents, which have just been sustained in an injunction suit brought against an imitator. Baker & Hamilton have established agencies over the greater part of several States. Write them at San Francisco, Cal., for particulars.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING AUGUST 12, 1902.

- 706,872.—DRILL ROD—J. H. Adams, Fullerton, Cal.
- 706,873.—GAME—J. S. Ackerman, San Diego, Cal.
- 706,703.—PRINTING PRESS—H. B. Allen, S. F.
- 706,711.—EXPLOSIVE ENGINE—G. S. Andres, S. F.
- 706,715.—ABDOMINAL BANDAGE—Mildred T. Barnett, S. F.
- 706,716.—MALTING KILN—B. Berg, S. F.
- 706,886.—BOILER—J. A. Bernardi, Salem, Or.
- 706,722.—CANOPY—E. G. Burland, Watsonville, Cal.
- 706,724.—GLOVE—R. N. Carson, S. F.
- 706,641.—FENCE—W. Crabb, S. F.
- 706,803.—BUOY—W. S. Crouch Jr., Tacoma, Wash.
- 706,804.—BUOY—W. S. Crouch Jr., Tacoma, Wash.
- 706,904.—DOOR STOP AND CATCH—J. Daniel, Los Angeles, Cal.
- 706,909.—GARMENT SUPPORTER—W. L. Dinsmoor, Portland, Or.
- 706,732.—APPLICATOR—A. W. Ellington, Los Angeles, Cal.
- 706,917.—SPLIT PULLEY—H. W. Finch, Tacoma, Wash.
- 706,755.—RABBIT CARRIAGE—D. C. Jackling, Republic, Wash.
- 706,756.—ORE FURNACE—D. C. Jackling, Republic, Wash.
- 706,571.—COFFEE ROASTER—F. Krux, S. F.
- 706,836.—SCOOP—W. R. Lee, St. Clair, Nev.
- 706,986.—LAWN SPRINKLER—P. Moderson, Fruitvale, Cal.
- 706,775.—FORMING STATUARY—F. Peano, Oakland, Cal.
- 707,001.—OIL BURNER—C. T. Pepper, Los Angeles, Cal.
- 707,003.—ROTARY ENGINE—J. P. Pollard, Silverlake, Wash.
- 706,779.—THRUST BEARING—J. Porritt, S. F.
- 706,787.—VANNER—C. C. Pratt, Portland, Or.
- 706,697.—ARTICLE ATTACHER—H. H. Sims, Oceanpark, Cal.
- 706,865.—SAW SET—D. W. Solomon, Arlington, Wash.
- 706,703.—BUR CHUCK—T. R. Tierce, Downey, Cal.
- 707,038.—ENGINE GOVERNOR—M. F. Volkmann, Santa Monica, Cal.
- 706,620.—WAVE MOTOR—H. Williams, Willits, Cal.
- 706,621.—SINK STRAINER—S. F. Williams, S. F.

Prune Dip.

"Greenbank" Pure 100% Caustic Potash and 98% Powd. Caustic Soda.
T. W. JACKSON & CO.,
Sole Agents, - No. 123 California Street,
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depends upon the make of the wheel.
ELECTRIC WHEELS
last almost forever. Fit any wagon, straight or staggered spokes. Write for the catalogue. We mail it free.
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Breeders' Directory.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

JERSEYS—First-class regist'd bulls for sale. Inquire C. L. Taylor, 218 Sansome St., San Francisco.

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JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAKS & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

J. H. GLIDE, Sacramento, Cal. Have 70 choice Durham Bulls for sale.

JERSEYS—The best A. J. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

SWINE.

POLAND-CHINA PIGS.—Write us for prices on sows and boar not related. Sweepstakes herd—State Fair. S. P. Lindgren & Sons, Kingsburg, Cal.

SUTTON BROS., Lodi, Cal. Breeders of Regist'd Poland-China and Large English Berkshire Hogs.

BERKSHIRE, POLAND-CHINA & DUKOC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. L. BOURLAND, Bishop, Inyo Co., Cal. Breeder of choice Thoroughbred Duroc Hogs. Five sows of unrelated families. Breeding stock for sale.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

ASHLEY BROS., Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and Importer of South Down Sheep.

SHROPSHIRE RAMS. C. A. Stowe, Stockton.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

MEAT MEAL.—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

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DON'T STOP NOW. My system of feeding enables you to successfully RAISE CHICKS ALL YEAR ROUND. Write to-day for particulars. Geo. H. Croley, 508 Sacramento St., San Francisco, Cal. Mention Pacific Rural Press.

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1. \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

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will be received and opened September 20th, 1902, by the **GUINDA PRUNE GROWERS' ASSOCIATION** for

350 Tons (more or less) of Good Merchantable Prunes

grown and cured in Capay Valley, Yolo County, California. Bids to be made on basis of the four sizes, with premium of large sizes F. O. B., **GUINDA, CAL.** purchaser to furnish sacks. Each bid must be accompanied by a certified check to the amount of \$1000.00, payable to the undersigned. The Association reserves the right to reject any or all bids. Correspondence solicited. Address

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Write for particulars to
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In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

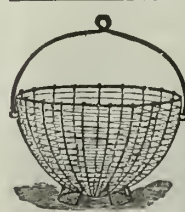
The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.



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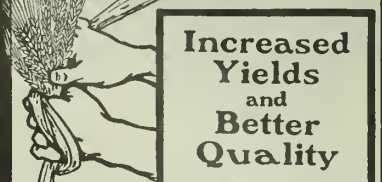
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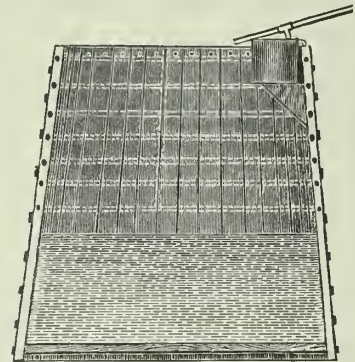
in proper proportion is an essential aid to success.

All that the best agricultural authorities have found out about fertilization is told in our books. We mail them free to farmers.

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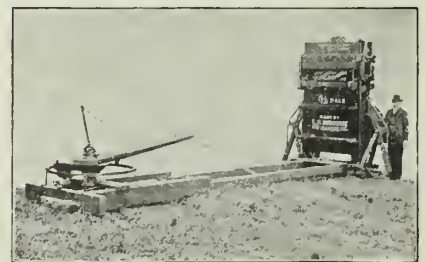


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Made of Yucca Palm.

Is cheap, durable, and quickly put on the tree. It prevents Rabbits from destroying your trees. A sure protection against frost, sun-burn, grasshoppers or dry winds. Can be easily removed; will last for years.

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PRICES:

12 inches long,	\$ 9.00 per 1000.
14 "	" 10.00 "
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18 "	" 12.50 "
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ON THE ROAD.

Typical Towns of Two Valleys.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

The awakening of California is a matter of the gravest interest. The change that is almost everywhere taking place—of the transforming of a few large land holdings into many small ones—is the foundation of human progress. It is in every way the foundation of business success. That this is the view taken by the best trained business men can be seen from the action of the Southern Pacific Railway in securing 120,000 acres of land near Fresno for colonization purposes. This awakening and transformation is not yet so apparent in the Sacramento valley; but it is coming, nevertheless—coming surely and steadily, with prosperity and human culture of every kind in its train.

Below in the columns of the PACIFIC RURAL PRESS is presented sketches of two towns, typical of the progress in either valley.

ORLAND.—Saloons exist in Orland, but they get very little attention. Many of the farmers in the last two or three years have just naturally quit some of the bad habits which seem to deaden too many wheat-supported towns.

Orland, up in the Sacramento valley, on the dry west side of the valley, 167 miles north of San Francisco and 10 miles west of the Sacramento river, is one of the little towns of that valley that have awakened to their possibilities and powers and are coming on.

It is a really notable little town, on several accounts. It has a local newspaper editor who tries to combine people together for some good purpose, rather than to set them by the ears.

It has a new hotel 112x98 feet, in an L-shape, by 32 feet in width, two stories, of brick, and contains twenty-eight sleeping rooms—none of them dark; has rough-coat plastering and oiled-wood wainscoting inside finish in the main rooms; it was put up by popular subscriptions by citizens incorporated into a company and will be opened Sept. 1st by B. L. Kesselring. The cost of the hotel was \$20,000, and one-half of that was raised within twenty-four hours.

Orland has also a department store, of which it is justly proud. It is 110x90 feet, of brick, one story, lighted by acetylene gas and well stocked in all principal lines.

The Northern California Power Co. of Redding has just built its line to Willows through Orland, thus giving light and power for all purposes, making many enterprises possible.

In fruits this year oranges will not be as heavy as usual, but the crops of apricots, peaches, almonds and grapes are good. It is quite likely that Orland could take the first prize for, in every way, the finest crop of almonds in the State this year, from the 35-acre orchard of P. D. Bane.

A movement is on foot to establish a creamery, which, if it shall be done, will be a great help.

A new \$4000 high school is to be ready for occupancy December 1, or near that date.

Orland is situated on high land, rolling gently to the north, east and south, which gives it good drainage. The soil is excellent, and Mr. Bane's orchard is an example of what can be done in the orchard line with good cultivation without irrigation. On the highest ground it is but 15 to 25 feet to good well water, yet the whole section has abundance of irrigation water at hand from

Stony creek, a main ditch and many laterals having already been built. With a climate as clear, dry and hot—which is what makes early citrus fruits—as any, Orland vicinity is prepared to compete with any point in the State for the Thanksgiving market and its high prices, being also free from fruit pests in orange culture. Altogether, Orland is one of the enterprising towns of the Sacramento valley which has awakened. It seems to have, in a moral way, in a business way, and in a material way, a firm basis for prosperity.

THE GATEWAY CITY.—Stockton, the gateway city of the San Joaquin valley, at least to the traveler who enters by the central route across the continent, is becoming more and more a city of commercial and manufacturing importance. Some of the greater features of recent growth are the window glass factory, which will turn out about 65,000 boxes of that product per year; the National Ice Co. factory, which turns out about twenty-five tons per day and has cold-storage facilities for butter, eggs, etc.; the manufacture of Tesla briquettes from coal and asphalt waste; the Davis Oil Refining Co., for refining crude petroleum; and the large brick extension, near the Stockton creamery on the S. P. railroad, of its warehouse and sales office facilities by the Moline Plow Co. In addition to the above, there is the Angels Iron Works, which now has plants at Angels Camp and Jamestown, and is putting nearly \$250,000 into three new buildings and machinery along Main street. The company is now casting at its plant in Angels an iron wheel, with 15 feet diameter and 2 feet face, but when finished the main plant will be at Stockton, where the head office now is. The Holt Bros. Co. factories have reached out and are still reaching over block after block, absorbing other firms and plants until they are now not quite but almost the whole thing in the way of the manufacture of agricultural implements and are reaching into the field of demand for other heavy machinery; the occupancy of an entire block on Aurora street for new works of the Samson Iron Works; the building of a new shop and an addition to the old one by the Globe Iron Works; the eventual building by the Southern Pacific railroad company, it is locally reported, of new roundhouse, repair shops and general purpose buildings on three blocks of land which they have bought on Aurora street; and the two excellent creameries, the Stockton and San Joaquin.

The publication of a magazine, called "Gateway," and entirely devoted to the San Joaquin valley, has been begun at Stockton. It is elegant in style and interesting in contents.

In the country about Stockton the most notable tendencies of development are the very marked one, in a vineyard way, in the northern part; toward irrigation, and the natural grass accompaniments of it, in the southern part; the development of asparagus and potato raising on the islands; an increase of thoroughbred stock, and reputedly the largest seed farm in the United States.

Stockton is this year more than keeping up its reputation as a green fruit shipping point. The packers are the Earl Fruit Co., D. D. Trahern in charge; E. L. Robinson, representing the Gamble-Robinson Commission Co. of Minneapolis, who are packing at several points in this State, at Stockton doing a generally f. o. b. business, it is claimed by them; and Jeffries & Co., with W. C. Wisecarver in charge, shipping about two carloads a day, and doing apparently a first premium business—the first two firms located on the Southern Pacific track, the latter on the Santa Fe.

But above all, Stockton is proud of her new Government Postoffice building, which is very modest in design, but pretty in appearance.

Mr. HOMER P. SANE of San Francisco reports the sale of imported Iowa Shorthorn bull "Mahlon" to Mr. J. E. Dickinson of Fresno, Cal.; also, three thoroughbred French Merino bucks to Mr. J. S. Rohrbough of Mendocino county.

Where Is the Belgian Hare?

What, in the name of humanity, says the New York Sun, has become of that wonderfully interesting little chap, possessed of more virtues to the square inch than all the rest of the animal kingdom combined, the Belgian hare? Less than a year ago he was heralded far and wide as the benefactor of the universe. Statesmen knelt at his shrine; legislators considered his needs; associations were organized bearing his name; banquet and food shows were held in his honor; epicures smacked their lips at the thought of him; invalids ate him and were cured; sportsmen delighted to sing his praises; acres of valuable land were set apart for his benefit, and fortunes awaited all who were shrewd enough to start a Belgian hare farm.

We were told that want or hard times could never overtake us while Belgian hares were in our midst and their comrades were in our orchards. Their flesh was better than turkey; their fur beat seal and otter; and in disposition they were the embodiment of all that was gentle and lovely. To breed and cultivate these hares was the easiest thing out. They would eat uncomplainingly whatever they could get, and two hares were all that a man needed to start with, in order to become independently rich in a short time. Proof of this was given in an authentic statement printed about two years ago in the Argonaut of San Francisco. There it was shown, in estimating the hares' average rate of increase, that one pair of animals would be represented at the end of a year by twenty-two, and that in five years, if the increase went on proportionately, the descendants would number 3,809,322.

What, we ask, has happened to the Belgian hare family? Where are all its historians and advance agents? Where are its 10,000,000 or more representatives who were reported by those hare census takers to be living last year in the United States, and what have they done for posterity? Where are the thousands of tons of canned hare supposed to have been put up in Arizona and other States of the Southwest? And what about the multitude of people who, having tasted hare meat, swore never to forsake it? How are their appetites being appeased?

The human stomach is subject to many distressing affections, like cramps, cholera morbus and dysentery, which, if neglected, are dangerous. The best and quickest remedy is Perry Davis' Painkiller. Look out for substitutes. 25c. and 50c.

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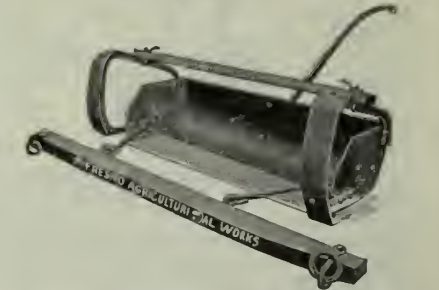
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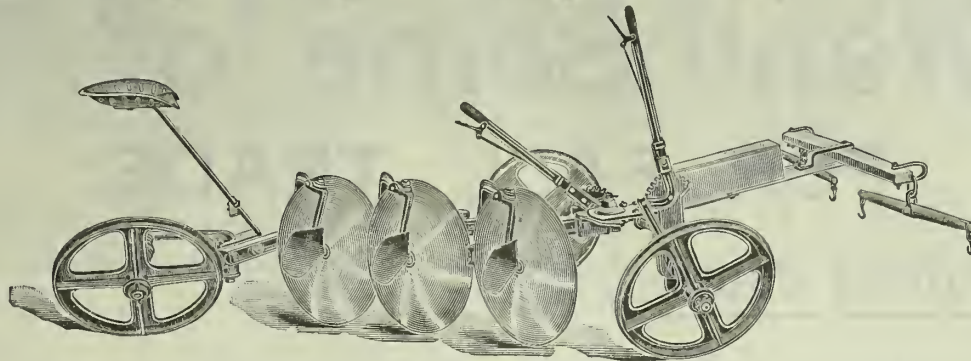
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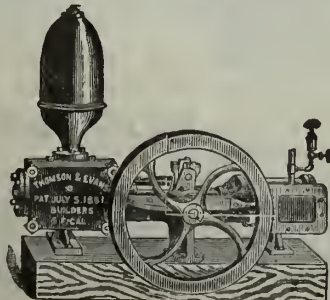
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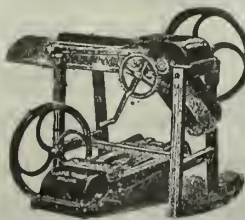


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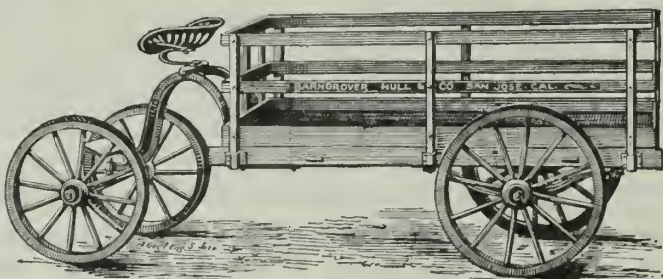
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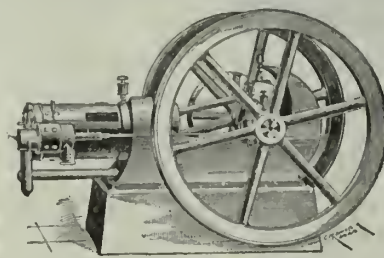


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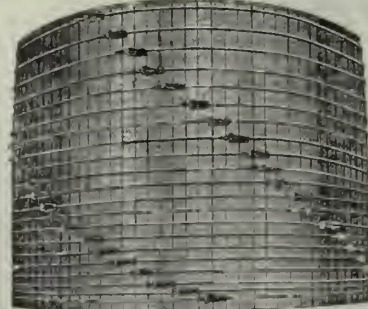
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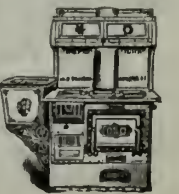
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 10.

SAN FRANCISCO, SATURDAY, SEPTEMBER 6, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Corning and Its Vicinity.

One of the bright and growing towns of northern California is Corning, a place of about 2000 inhabitants, situated in a peculiar section of the Sacramento valley included in the political division called Tehama county. The growth and prosperity of the town are not wholly, but are largely, conditioned upon the orcharding situated closely about it, most of which has come into bearing in the last few years and the whole of which now cuts some figure commercially. The pictures accompanying, taken from one of the low hills or bluffs near town, give a very fair idea of this section and the town. In addition to this orcharding, and to grain raising, much of which is still going on about Corning, alfalfa and stock raising and poultry and egg producing are coming into prominence, and are destined to serve to diversify the industries of that section and render its prosperity more sure.

The idea that fruit can not be profitably raised in many of the richer sections of the Sacramento valley—long almost exclusively devoted to grain raising—is one that is rapidly disappearing. Much depends upon the sort of fruit the raising of which it is proposed to attempt, as to whether it can be raised or

with water-bearing gravel that they prove to be equally good sections for orcharding. There has been some question about the section around Corning as to orchard development, but perhaps what has actually been produced there in the last ten or twelve

is, dying ones or those that showed any such tendency, and not one orchard of any size that could be so spoken of; while the 10,000 planted acres bear all sorts of fruit trees, from spring setting to twelve years old. The trees grow to medium size, and bear



Town of Corning and High Lands Planted to Orange and Olive.

years, shown by the photographs herewith, is the best evidence on the subject. And while the largest part of such development has been made under one management and the name of "Maywood Colony," such development has not been confined to it, and some of the oldest orchards are not a part of it. There are said by those best acquainted there to be about 35,000 acres in the peculiar appearing section in which Corning is situated. Of

early and heavily for their age.

The attempt to build up this section by orcharding was based by Foster & Woodson (lately succeeded by Warren N. Woodson) of the Maywood colony on superficial and other peculiarities in the country, which are exceedingly interesting to the eye, but which do not show in the photographs. There is, at this point in the Sacramento valley, a crosscutting valley running across the Sacramento valley diagonally from the northwest to the southeast. The edge of part of it may be seen in the smaller picture. The limits of this cross valley are clearly defined by high land on either side, so that the valley looks like the abandoned bed of a dried-up stream, which is several miles across and some 12 miles or more long, beginning with two prongs which coalesce to form the middle part of the valley, and again divide a mile or so southeast of town and end at the Sacramento river, 3 miles or so east of Corning. On this obvious peculiarity, re-enforced by an alluvial and gravelly formation in the valley and the presence of water within 5 to 8 feet of the surface, the development of orcharding was begun and has so far been continued.

The smaller picture here shows the hills of red land by which the cross valley goes in two divisions to reach the Sacramento river. On these Messrs. C. H. Foster and W. N. Woodson have planted orange and olive orchards, where it is 80 to 100 feet to water, and are supporting them by irrigation with water gained by pumps from wells at the foot of the hills and applied through cement reservoirs on their summits. But the orchards on the lowlands are unirrigated, though the development of the Litchfield colony, some 5 miles to the west toward the coast mountains, toward which the cross valley rises, is being based on ditch-system

irrigation, with an abundance of water, which tends to assist the orchards nearer town on the Maywood colony tracts, lower down.

Corning has ample cannery and fruit-drier facilities, which were notable last season for their cleanliness when in operation; and it has a very social and intelligent people, largely drawn from Eastern States.



Orchards on the Low Lands of the Cross Valley, near Corning.

not successfully and to a commercial degree. It is becoming gradually more settled that the right fruit with the right methods can be raised almost anywhere in the great valleys of California, as well as elsewhere in the State: in some places without irrigation, in others with it. Some sections, as those around Chico and other places, having a dry appearance when devoted to grain raising, are so overlaid

these over 25,000 were included in the "Maywood Colony" promotion of development, and about 11,000 acres have been planted and are settled upon by residents, though there is some non-resident cultivation. It can be truthfully said that whatever the developments of the future in this section may be, more than half a day's travel through its orchards in June last did not show more than 500 poor looking trees, that

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E. J. WICKSON. Horticultural Editor

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The Week.

The lines of chief activity are the same as last week—warm politics for the statesmen and warm work for the industrialist in finishing up the grain harvest and pushing on in the caring for the later fruits. In many fruits it is an off year for profits and some losses will have to be covered. Such experience seems unavoidable in the present condition of trade and manipulation. It is the trough of the sea into which even staunch craft sometimes fall and are severely tried. It is much the same all along the coast. The only way to proceed is to swing out of it as soon as possible. There is every reason to believe that this year's troubles are only temporary. There is nothing to indicate that higher levels are closed; in fact, there is every reason to anticipate marked improvement before another fruit crop can be secured, and at an advantage next year as great as disadvantage has seemed this season. The situation will clear and all wise efforts will yield good returns.

There has been quite an active outward movement of grains and breadstuffs, two full cargoes of wheat, two full of barley, two mixed wheat and barley, to Europe; another part barley to New York, a part steamer load of wheat to Peru, some rye to Australia and Belgium. There is nearly half a million dollars in these grains and a large lot of flour, mostly to China. California has given the outside world quite a mouthful this week. Wheat is quiet and unchanged, except that futures are a fraction better at the close. Barley is stronger for feed and firm for brewing and shipping. Minor grains are in the same shape as last week. Beans are quiet and waiting for the new crop. Whites and Bayos are a little lower and Pinks easier. Bran keeps up—some going to Australia—other millstuffs are unchanged. Heavy arrivals of hay continue, but they are mostly in second hands and the price keeps up. All meats are unchanged; fresh pork holds up, though Eastern hams are being cut a little. Strictly fancy fresh butter is stiffer, though the trade is running largely on cold storage. Eggs are in the same shape as butter. Fine, mild new cheese is in light supply and firm. Poultry is also in lighter receipt and firm, especially young chickens. Potatoes are stronger, but not materially higher. Movement to Texas is considerable. Onions are steady and quiet. The fruit market is in better shape; there is better tone and less surplus, so that more sales are possible at full quotations. Cling peaches are suffering still, however, and fall nearly to the price of freestones. Dealers complain of the scarcity of fancy pears, though common are so low. A few Valencia and

seedling oranges bring fair prices. Lemons are dragging. The dried fruit markets are quiet. Eastern buyers are scared by the low futures of jobbers. Apricots are brightened by a shipment of 100 tons to Europe. Little is doing in new prunes. Figs are selling better than the general condition of things might indicate, and white figs are bringing good prices. Honey is firm and higher for extracted—quite a shipment has been made to Antwerp. Almonds are rather slow, but not quotably lower. New hops are in and held at 24@25c, while bids are a little lower. Wool is the same as before: good is wanted at full prices, but none in sight at this point.

The fairs are proceeding in the several districts, and next week the State Fair will open at Sacramento. We are glad to hear that the demand for accommodations for live stock is phenomenal. Directors Cox and Paine have been busy selecting space to build additional cattle stalls at the park, and contracts have been let for additional stalls to accommodate the large number of pure-bred beef and dairy breeds that will be on exhibition. Cattle from Wisconsin, New York, Kansas and Nevada will be on exhibition, as well as a large collection of California stock. Swine, sheep, goats and poultry applications are far ahead of any previous Fair. Splendid individuals in all classes will be on exhibition. The directors have made every effort to put the live stock and other agricultural features of the Fair to the front. It is said that over 100 head of Holsteins will be displayed, and breeders of other dairy stock should see to it that the field is not left for the black-and-whites. The local Jersey men should do their breed justice. It is reported that a herd of Jerseys, prize winners at the New York State Fair in 1901, at Charleston also in 1901, will be brought from their New York home to show our California Jerseys a thing or two. There will be lots to see and there should be many to see it.

Naturally, there is an issue over the judging and even that will make the fair better and more interesting. We have already said what we think of the single judge who was selected, Prof. Carlyle, of Wisconsin University. We also gave last week an argument in favor of the single-judge method. We are pleased to know that a leading California breeder, for whom we have great respect, Mr. Henry Pierce, owner of the Yerba Buena Ranch herds, is not afraid to say what he thinks of the modern method of judging. Mr. Pierce favors us with the following interesting note:

TO THE EDITOR:—Your paper of last week devotes considerable space to professors from experiment stations as one-man judges. For myself, I do not believe in having one man for any important position. I want the President to have an able Cabinet, a general to have good aides; several doctors, when one's life is in the balance; a State Governor, with a board of able counselors; several engineers, when one has to pay out vast sums of money for building canals; no one man's opinion should be taken on important questions.

Do men who put up large sums of money for Jerseys on the island, or buy them at Cooper's sale, let some professor bid and choose for them? No; they back their own judgment. Do you suppose that Henry Miller and Cox & Clarke send a professor from Cornell to buy beef for them? They want men to tell at sight how much an animal will kill and those men who have had large experience.

Can any man look at a cow and tell how much she will milk, or how much butter fat her milk contains? No; but men who have bought and sold, handled, milked and worked thousands, costing from \$100 to \$5000 each, make the best judges.

Moneyed men who wish to invest in thoroughbred stock do not send professors from some college to buy them. They send a Cooper, a Peer, a Fuller, Burnett or Alvord, or men who know an animal the moment they look at it. I believe in educated men, but to be most useful a man must have large experience.

HENRY PIERCE.

Yes, the one-man judge who is fit to act has all these qualifications, and he has more of them than any group of men of ordinary experience that you can pick up. We venture the assertion that Prof. Carlyle has seen and critically examined more stock than any ten men who will be at the State Fair; that he has a more definite and exact idea of the standards of each breed than all the groups of judges which could be made up there; that he is far above provincialism; that he knows no man and no man's interest; that he cannot be reached by social arguments; that he carries in his eye typical forms and characters more sharp and accurate than any one who does not give his life to sharp study of his specialty can ever see. To use Mr. Pierce's figure,

Prof. Carlyle has profited by all the cabinets and general's aids, doctors, counsellors and engineers that exist in the live stock line, and he comes to give judgment, clear, sharp and final, on each case as it comes before his trained eye and mind. The old style of judging, with its connubiations and favoritism and prejudices, has gone by. Prof. Carlyle is a member of the group mentioned by Mr. Pierce at the close of his note. He has large experience. He knows an animal when he sees it, and those who watch his decisions will learn something.

QUERIES AND REPLIES.

Pear Scab and Cracked Bark.

TO THE EDITOR:—I send a sample of wood from the limb of a pear tree. The disease is more or less on all of the trees, except the younger trees, which are about one-third of the entire orchard of about fourteen acres. It has been on the trees for a number of years. There is also black scab—very bad—on some of the pear trees. I send you seven pears with black scab on them. The orchard has been sprayed regularly each year with Bordeaux mixture and Paris green, but it has had little or no effect on these two diseases. I wish to have your advice and remedy for the black scab and disease on the bark of the tree. It seems to begin on the body and extends to the limbs. Please state if, after scraping the rough loose bark from the body of the tree, you can recommend any wash or emulsion for the tree, to soften or aid the bark to recover from this hard, scurfy bark. If so, kindly give it to me, so that I can not go wrong in putting the materials needful into the emulsion, and the proper time of the year to use it. The soil is good, strong, fertile soil, wet underneath, water line 2½ to 3 feet under the surface, well sheltered climate.—DAVID JACKS, Monterey.

The scab is amenable to treatment with the lime, salt and sulphur as a winter spray for the purpose of killing the resting spores on the bark. Subsequent treatment, after the foliage appears, with the Bordeaux mixture should check any later introduction of the disease. Why your treatment with Bordeaux and Paris green was not effective we cannot be sure. It does, however, require several applications to cope with both the scab and the codlin moth. Possibly, you did not spray often enough. The trouble with the bark is quite common on pear trees and has been observed in this State from the earliest planting. It is rough and unsightly, but, fortunately, so far as the growth of the tree is concerned, is much worse in appearance than in effect, because this cracking only involves the outer bark and growth proceeds regularly under it. It is, however, undesirable. Experience is that the winter use of the lime, sulphur and salt facilitates the scaling off of the cracked outer bark, and in that way probably ministers to the better condition of the inner bark. We doubt if hand scraping would be desirable. It would be expensive and might result in greater injury to the inner bark. The lime, sulphur and salt wash lessens the scales and they fall off of their own accord.

Beet Sugar and Cane Sugar.

TO THE EDITOR:—There has been a surprising complaint of "ill luck" among the housekeepers in canning apricots, and a growing rumor that it is beet sugar that is at fault. It is not the cans, as both glass and tin are equally affected, and the fruit ferments and bursts the jar or blows the lid off the tin can, so it is not imperfect sealing. It is old and experienced housekeepers, and not novices only, who complain. Is there a real chemical difference between the beet and the cane sugar, which requires different treatment in cooking? Some say that the one sugar crystallizes and the other "jells" when combined with fruit acids. The beet sugar is no longer put on the market under that name, as formerly, and if there is any real cause for the complaint against it, something should be done to protect the consumer.—READER, Campbell.

Some very careful experimentation is required to determine the accuracy of the common impression against beet sugar for canning and jelly-making. Chemically the sugar from the beet and the sugar from the cane are identical. If the refining is perfect there ought to be no trouble; if the refining is not quite perfect the effect upon the beet sugar is worse than upon the cane, because the refuse materials, or impurities, in the beet are more ill-favored and objectionable than in the case of the cane. The same percentage of impurity in the sugar would, therefore, render beet sugar worse than cane sugar for uses in which this impurity might assert itself. There are cases on record of successes on a large scale in using beet

sugar for canning. On the other hand, there are many strong impressions against it. This is the way the matter stands at present. The University beet sugar expert, Dr. Shaw, has in mind a course of close experimentation to determine the matter definitely, if possible, and we hope he may be able to carry it out.

Preparing Heavy Land for Alfalfa.

To THE EDITOR:—Last year I prepared some land to be checked up and planted in alfalfa, but on account of the season, etc., I planted it to corn and pumpkins, which, because of the dry heat of the land, did not come up, neither did any weeds. This coming year I intend to put in a pumping plant, and check up and plant the land in alfalfa. When should I begin working the land up, and how many times, and before or after checking? When should I sow the alfalfa and how many pounds to the acre, and should I sow barley with the alfalfa? The land is strong and heavy, which has been farmed but very little, and of an adobe character.—A SUBSCRIBER, Santa Clara county.

Strong, heavy land of an adobe character is not best for alfalfa, and it is pretty difficult to get it into good condition for alfalfa growing. If it is really adobe, you cannot do anything with it economically until you have had rain enough to make it work easily. Start in then and plow deeply as you can, grade and make your check levees while the soil is in good condition, for if you get too much rain you will have to let it lie until spring (unless you have very scant rainfall), and then it is very difficult to get the work done and seed in before it dries too hard for a good catch of the seed. If you can get the land in shape this fall, cross-plow the check bottoms and let lie until spring; then, as early as the ground works well, plow enough to cover in the weeds, sow about 20 pounds of seed to the acre and cover with a brush harrow very lightly. Do not sow any barley with the alfalfa.

Budding in the Mojave Region.

To THE EDITOR:—A seedling almond orchard, 1½ years old, growing vigorously, some trees nearly 2 inches in diameter already, on quite moist land, 4000 feet above the sea, where the thermometer sometimes goes down to 15° above zero, has just been budded and part of the bands has already been taken off. Some buds have started to grow. Others seem dormant. Some of these latter are liable to be covered by the rapidly swelling bark of the vigorous trees before the season closes. If these buds were forced out now, would they not be so tender as to be killed by the frost? Will it be best to let them remain dormant as far as possible this fall?

On very dry lands, where trees make little growth, would it be wise to cut back the top somewhat, before or at the time of budding in midsummer, to help the tree better "to welcome" the buds when inserted? I have known this to be done with orange and lemon trees.—READER, Fairmont.

It would be safer not to force out growth as late as this, but to allow the trees to finish their growth and cutback in the spring before the growth starts, not removing all the top even then, but complete the removal as you see that the buds start and are able to take the sap. Removing part of the top before the budding time in midsummer would be helpful where the trees seem to have limited vitality. We believe, as we mentioned in reply to a previous query, that the secret of greatest success under your desert plateau conditions would be to bud as early in the season as possible and to induce the bud to immediate growth.

Sweet Clover Again.

To THE EDITOR:—I send a specimen of seed which was separated from a crop of grain grown here. I would like to know the name of the plant furnishing it. Please state whether it is commonly called sweet clover.—SUBSCRIBER, Stockton.

The seed you send belongs to a species of sweet clover, but our botanist is unable to state whether it is *Melilotus indica*, or *gracilis*, which is a closely related species. It is probably *indica*, because that species is known to be somewhat abundant in your district, to grow rankly and to injure the grain for milling purposes by the peculiar aroma which is imparted to it. These sweet clovers, including the white blossomed *alba*, are a great pest to grain growers in some parts of the State, and they also are injuring a good many alfalfa fields. From a California point of view they are bad weeds. The sweet clover is not readily eaten by stock, and about its only claim for toleration lies in the fact that bees get

honey from it and that it is sometimes valuable as a winter grown crop for ploughing under as green manure early in the spring time, but in grain or alfalfa it is a serious nuisance.

Eastern Red Cedar Suggested.

To THE EDITOR:—On page 130, August issue, you advise "Reader, San Francisco," to use Bermuda grass or Australian rye, better known by too many as Johnson grass, on a new embankment. You certainly have a grudge of long standing and very bitter against Mr. Reader, for it is hard to conceive a worse or more dangerous plant than either. Tell him to plant Red cedar of the Eastern variety. It looks better, is better, and is a step toward reforestation of our denuded area.—A. G. WISHON, Visalia.

We never heard before that Australian rye was mistaken for Johnson grass. They are as unlike as can be, both in appearance and habit. Johnson grass would not live on a dry bank on which Bermuda would hold. As for the viciousness of Johnson grass—that depends much upon your point of view. Mr. Dye of your county had an interesting defense of it in our last issue. We had no idea that Eastern red cedar would grow on a dry bank of decomposed rock soil in the interior of California. We would like greatly to have information on that point. Our former querist wished something to fill his dry bank with fine roots to hold the soil in place. We doubt if any tree-like plant would do it. The bank would be badly gullied before the trees could establish themselves; they would need the assistance of creeping plants to hold the soil for them, would they not? Read about lippia on another page of this issue under the caption "A Dry Land Plant."

Crude Oil and Gophers.

To THE EDITOR:—Do you consider the mere sprinkling of crude coal oil around the gophers' favorite plants—young fig trees, for instance—would be of any practical utility? I have heard of its successful use on the levees to keep away gophers.—T. W. J., San Francisco.

As we understand it, the gophers were prevented from working in the levees near Yuba City by a thorough soaking of the surface soil with crude oil. This, of course, is very different from slight sprinkling of the surface with oil, and we believe that such slight sprinkling would have no restraining effect on gophers, nor would it probably injure the plants. We apprehend, however, that such saturation as would be necessary to discourage gopher action would also be destructive to plants.

Killing Yellow Jackets.

To THE EDITOR:—Some years ago there was an article in regard to poisoning yellow jackets in the PACIFIC RURAL PRESS. Some fruit grower used beef's liver dipped in acid, but what kind I do not remember, and would like very much to know.—G. L. R., Dove, San Luis Obispo county.

Take five pounds of arsenious acid (common white arsenic) and dissolve it in boiling water in some old vessel which cannot possibly be used for any culinary purpose afterwards. Cut the liver in pieces as large as your fist. Take pieces of baling wire, make hooks on the ends, fix the chunks of liver on them firmly and then dip in the hot poison a minute or so. Hang them near the fruit and the jackets will go after the liver greedily, carrying it away to poison their offspring. Bees will not touch it.

Grafting Affinities.

To THE EDITOR:—Will it do to graft German prunes and Damson and Green Gage plums on old French prune trees? Also, Bellflower apples on Flemish Beauty pear trees, and White Pearmain on Red Astracan?—SUBSCRIBER, Lompoc.

You can graft any prune or plum which we know of on French prune stock, and any apple we know of on Astracan stock, but do not try pear on apple or apple on pear unless you want to be chagrined by apparent success and subsequent failure.

An Ear in the Wrong Place.

To THE EDITOR:—I am sending you in a separate package a curious little specimen which may interest the readers of your valuable paper as a freak of nature, viz.: a corn tassel with an ear of corn growing on the end. There were no husks on the ear.—A SUBSCRIBER, Sebastopol.

The specimen is just as described—a tiny ear with fully formed kernels of corn growing from the ends of one of the strands of the tassel. We have never

seen such a case of hermaphroditism before, though it may not be new to the records or the experience of others. What can our corn growers say on that point?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 2, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather during the week was generally cool and clear, with light southerly winds until Saturday and Sunday, when warmer weather, with fresh north winds and maximum temperatures of about 100° or more occurred. The Observer at Sacramento reports that fruit shipments are very heavy. Tokay grapes are being shipped, but owing to injury by previous hot weather it is doubtful if a full crop will mature. Hop picking is progressing nicely, with a heavy yield of good quality. Oats thrashed are not yielding as heavily as expected. Almonds are being harvested; crop heavy. Prunes continue to do well. Pears are ripe, and large quantities are coming into market. In the northern portion of the valley the weather during the week has been good for drying. Oranges in the Oroville district are doing nicely. The seedling crop will be light, but other varieties are good. Olives show a good setting of fruit and are filling out well.

COAST AND BAY SECTIONS.

The weather during the week was cloudy and cool and rather unfavorable for fruit drying, with the exception of the last few days, when much warmer weather prevailed. Fruit is ripening rapidly and canneries and dryers are busy. Hop picking has begun at many points. Large quantities of peaches and prunes are being dried, while heavy shipments of pears and grapes are going East. In the northern coast counties the cool nights have somewhat retarded the ripening of late crops. Bean canning has begun, but without sufficient beans for a steady run. The hop crop is said to be very good. Thrashing and hay baling will be finished in a few days. Corn and potatoes are thriving. From the Santa Clara valley there are reports that the heat and winds of the last two days are causing prunes to fall prematurely. Some prunes have been sunburned. Sugar beets are doing nicely and are ready for cutting; yield average.

SAN JOAQUIN VALLEY.

Clear, warm days with moderately cool nights have prevailed during the week. These conditions have been favorable for the ripening and harvesting of all crops. The grain harvest is over. Some wheat is being shipped, but most of it is being stored. Preparations are being made for fall plowing. Large crops of deciduous fruits are reported; canneries are running full capacity, and large quantities of peaches and pears are being dried. Prunes are coloring rapidly and are a large crop. Egyptian corn is doing nicely. A large crop of sweet potatoes is being harvested and freely shipped. Grape vines are in good condition and a large first crop will be gathered. Grape picking and raisin making has begun in many places. The apple crop in the mountain districts is reported large. Green feed is scarce, but dried feed plentiful. Stock of all kinds are in good condition. Citrus fruit is looking well.

SOUTHERN CALIFORNIA.

The weather has been cloudy and cool, with considerable fog in the mornings along the coast. All fruits are ripening well and much drying is in progress. Pears and prunes are being dried. In the southern portion the yield of peaches and plums is reported as being light, but the quality excellent. Grapes are ripening nicely and will yield a good crop. Up to the present time grapes have matured rather slowly, probably on account of the cool nights. Oranges are making fine growth and the outlook for a large crop is promising. Peach harvest continues, with a good yield, and excellent quality where the fruit has been properly thinned. Walnuts continue to look well. Sweet potatoes promise a good yield. The melon crop is fair.

LOS ANGELES SUMMARY.—Cool weather continues, with morning cloudiness in coast sections. Late peaches are ripening and many are being dried. Pears and prunes are ripe.

EUREKA SUMMARY.—All kinds of vegetables are growing satisfactorily and promise an average crop. Fruit is in good condition and ripening rapidly. Crops and pastures in the interior need rain.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, September 3, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.00	.23	.22	.37	62	50
Red Bluff.....	.00	.00	.00	.21	104	62
Sacramento.....	.00	.00	.00	.07	96	54
San Francisco.....	.00	.00	T	.07	82	52
Fresno.....	.00	.03	T	.09	104	60
Independence.....	.00	.00	.42	.09	94	58
San Luis Obispo.....	.00	T	.18	.08	90	48
Los Angeles.....	.00	T	.09	.06	84	52
San Diego.....	.00	.90	T	.08	72	60
Yuma.....	.00	.11	.22	.55	106	62

PUBLIC AFFAIRS.

Farming and Farm Labor.

By MR. C. W. THOMAS, President Woodland Chamber of Commerce:
Read before the Sacramento Valley Association and furnished
for publication in the PACIFIC RURAL PRESS.

When there is a demand in large numbers for farm laborers the farmer is inclined to overlook efficiency and reliability; when the demand is small in number he becomes indifferent to qualifications, and as a result the essential factor of the farmer's success is forgotten or neglected. The parable of the sower is alike applicable to the farmer and his laborers. More and more does the success in farming (I use the term in the broadest sense to include all kinds of agricultural vocation and employment) demand scientific knowledge, mechanical aids, responsibility and efficiency of both the farmer and farm employe. The demand is for skilled farm labor. The rich soil of California has lost much of its virtue. Prices on the market compel smaller holdings and more thorough, scientific farming, of a diversified character, and the relation of the farmer and his laborers should be co-operative in work and product. Large holdings call for comparatively few laborers, of limited qualifications. As the cultivation of large farms to special farming has continued the income has lessened, and the change of cultivation to diversified crops has made our farm labor transitory, until now in the large valleys we have the seeding time, the pruning of orchards and vineyards, the haying season, the picking, packing and marketing of fruit, the dairy farming, stock raising and truck farming in distinct periods and seasons, until farm hands have become migratory, moving from place to place as the character of employment demands. The quality of labor is more important to the farmer than the supply of the needed number. The present condition does not afford the farm laborer any opportunity to qualify himself for any special work, and he readily accepts employment in which he is least qualified, and loses sight of his obligation to do well his work and remain in service until his work is completed. The result is that the farmer is without protection. On the other hand, the laborer must be untrue to himself and to the farmer, and must remain idle for several months.

NATIONALITIES.—The essential qualities of the farm laborer are possessed by the Chinese and Japanese, while it is claimed that the white laborers that can be had are wanting almost wholly in the essential elements of a skilled farm laborer. The conditions which surround the white man and the migratory conditions which are forced on him have a tendency to degenerate the man. The search for labor has become distasteful and has had a bad effect. White men are not economical and have no disposition to be frugal or saving, and are prone to waste their wages in dissipation and to abandon their employment on the first pay day, regardless of what damages may result to the farmer. Notwithstanding we desire industrial efficiency, the Chinamen and Japanese are for many reasons not desirable or not wanted. Therefore the farmer faces the necessity of securing white laborers of equal qualifications, of stable habits and characteristic frugality and efficiency. The farmer alone must bring the farm laborer to realize his obligation to the farmer, and eliminate entirely the untrustworthy from those employed on the farm.

LOCAL CONDITIONS.—The conditions attending the development and growth of farming in California have been and are anomalous. There is no other State where politics has played such an important part as affecting farming. In a large degree this political influence, emanating from the large cities, has been ostensibly in the interest of the farmer, but, in fact, its power and the legislation secured by it has been vicious, and has cursed the farmer and made the farm laborer a subservient instrument to ends foreign to the best good of the tiller of the soil. Designing politico-labor leaders have falsely interpreted the universal principle, "the laborer is worthy of his hire," but artfully imbued him with the idea that he, and not his employer, governed by the law of supply and demand, should determine his wages, and have encouraged him to dissipation, idleness, and done nothing to encourage him to become a permanent citizen or to qualify himself for his employment. The present condition is this: There is war between the employer and the employe, and discord between the different classes employed. Labor agitation is now in the hands of men inimical to the farmer and the farm help. The new code does not contain the great moral principle, "In the sweat of thy face thou shalt eat bread." This axiom of frugality, contentment and prosperity is displaced by some false doctrine of time and wages, regardless of skill and industry. The conditions are such that wise men of experience contend that fruit culture and truck farming would become unprofitable without Chinese and Japanese help. A number have confessed that they would be forced out of the business if they were deprived of this class of employes, notwithstanding they pay the same wages to the Oriental farm hand, and notwithstanding they are willing to pay a larger daily wage to the white man. They contend that

they can depend upon the Oriental labor, but not upon the white. They prefer white help. Investigation discloses that this condition exists in every department of farming.

HOW IT CAME ABOUT.—The past history of farming in California is a record of disaster. At first the great valleys were one vast domain of pasture and were largely devoted to stock raising; then followed the era of wheat farming on a large scale with farms of almost unknown acreage; following this came large orchards and vineyards, and as the market was limited, and the soil became less productive, scientific farming and skilled labor became necessary. Our people looked upon these demands with suspicion, or were slow to change from the old, though they faced low prices and high-priced, inefficient labor. At the beginning of diversified farming the State was met by the almost calamitous litigation over water and water-rights, substantially destroying the benefits and profits of irrigation and thereby retarding the rapid growth of diversified crops, increase of stock raising as co-ordinate thereto and holding in check butter making and dairying in the hot valleys, and wasting in useless and vicious litigation the capital which would have been invested in farming on a profitable and scientific basis. These discouragements to farming have led to wild speculation along other lines. Again, proper attention to and proper study of trade in and market for farm products were neglected—all this had its first ill and evil influence upon farm labor, encouraging ignorance in the laborer, giving excuses for migratory and transitory employment—sustaining "blanket farming and employment."

CAUSES ASSIGNED.—The causes are not difficult to discover and the remedies, if enforced, are in the hands of the farmer and his laborer. The successful and prosperous pioneer farmers came to California "with their blankets on their backs," and began as farm laborers, and free from all labor agitation, by industry, frugality and saving, gradually became fixed land owners, permanent residents and prominent citizens. Notwithstanding social and political conditions have changed, it never occurs to them that the laborer "with his blankets on his back" has equal chances to success as in pioneer days; he is unwilling to believe that farming is more difficult than when he was a farm hand, or that a better knowledge of farming is required. He fails to discover that farm labor is discredited in the farmer's family and that his son does not go forth "with his blankets on his back;" and, again, he is unable to supply his needs from the resident families in his own community. May it not be that the pioneer farmer has done most to discourage the small farmer of family who can not only be his own landlord in some degree, but can from himself and family supply the demand for labor on the farm. No one but a farmer will suffer drunken, ignorant, unskilled labor. The future of farm industry and particularly truck farming and fruit culture depends on Oriental labor, or of the permanent organization and control of white labor. At the outset we are met with the contention that Oriental labor will undermine our institutions, and deprive our own people of employment.

QUALITY OF LABOR.—Industrial efficiency is of first importance to the farmer. There is no economy in the bare having a piece of work done. The loss better come for the not doing of a thing than as a result of improper doing. Better to lose a crop of hay than to house a ruined one by ignorance and unskilled labor. The improper pruning and cultivation of an orchard is of about the same duration of a young orchard brought to bear by skilled handling.

THE REFORM.—The remedies for farm ills are largely in the hands of the farmer. We must make the conditions such that the farm laborer discards his blankets, that he be sober and industrious and that he qualify himself for his work and exercise that frugality and economy that will make him the head of a family, a permanent resident and a good citizen. He must in some way protect the farm employer against the curse of the saloon, gambling house and den of vice. I have been told that there is a class of men who are induced to seek employment on large ranches to induce the laborers to patronize certain saloons and gambling houses, and I have quite frequently heard the argument advanced that saloons and houses of ill fame and other dens of vice are necessary in farming communities to prevent laborers going to larger cities to satisfy their vicious habits. Employment to be efficient must receive wages equal to efficient thereof, and farming so arranged as to give permanent employment—this with sober intelligent industry as the means of gaining that experience necessary to skill and responsibility.

If it is true that we cannot get labor of local residence, the farmers, with the aid of civic organizations, should colonize farm laborers, coming from the Eastern States and certain foreign countries—families who will become residents on small holdings or leased lands specially set aside to these families where the family can produce by kitchen gardening and truck farming the family supplies and aid materially in supporting the families while the older members can work on the farm and in the orchards. There is a great demand made by dairy and creamery farms for a certain class of foreign help that can be supplied by reasonable assurance of employment.

Farmers must supply better accommodations, well furnished, cleanly kept, well ventilated and supplied with proper and suitable reading matter, and all possible inducements to keep the men away from the saloon, gambling house and den of vice. The farmer must use every possible influence to bring his farm hands in closer touch with good society, the church, theater and the public library—and their families must be offered the best school facilities. The farmer can and must encourage the saving and investment of wages and to the growth of families in his immediate neighborhood. There is usually enough waste land on our large farms to locate several families and give continuous employment in gardening for the family use—gardening by those who are not capable to take work on the farm and by others when idle. California would be blessed by the elimination of the term ranch from her vocabulary and the substitution of the word farm. If not this, the time has come when the portions of large ranches will be cut up into small farms, and these families can be located on them. Farm laborer is a title of honor in many Eastern States and in most continental nations.

SMALL FARMS.—Thousands of Eastern families are ready to come to our valleys, and will come if they can get small farms from five to forty acres, and they will take farm employment to complete the year's work. No other part of the world affords such opportunities as California. Large ranches are forced to divide into small holdings, and if in the favored parts of our great valleys we can locate families who desire to begin as our pioneers began, we have solved the farm labor question.

Again, the farmer must discourage the brokerage and credit system carried to extreme by our merchants. Many of our merchants take due bills from the farm laborer and give him unlimited credit, injurious most to the farmer's credit, and dissipation often deprives the farmer of his best qualified help. The farmer should encourage his employes to deposit his wages in some reliable (his own) bank. When he can he should pay promptly by checks on his own bank and should proffer his services in making deposits of wages, and return to his laborer a "bank book," and if possible secure for him a small interest—in every possible way prevent him the excuse of visiting the small surrounding towns. This experiment has been tried with success. Credit is the curse of the farm laborer as well as the farmer.

EMPLOYMENT AGENCIES.—Effort should be made to direct and control in some measure employment agencies, or bring them under responsible legislative control. To the injury of the farmer and his help, these agencies cause a congestion of such labor in large cities. Experience of farmers is against the efficiency of employment agencies. They are quite as irresponsible as the help they supply. No matter what the demand, they will supply any kind that is readily at hand—even to the extent (I have an instance in mind) of recommending to you as sober, industrious and skilled a man who is known to him to be a hard drinker, a gambler and a man without experience—a man who could not hold his place. If employment agencies are necessary, we should establish them in agricultural centers—crowding cities—where the news can be known, and where the managers of the same can be brought in personal relation with the employer, and where personal responsibility can be enforced by the employer and the farm laborer.

CITY AND COUNTY LABOR.—Some effort should be made to protect unorganized farm labor against organized skilled labor. The union labor of the city shows the utmost contempt and practices the most contemptible and vicious injustice to the farmer and his laborer. Unblushingly will he displace the farm worker and shamelessly will he offer his services for less wages and longer hours, thereby securing the discharge of a co-laborer; while he pretends to be fighting for his family in the city for higher wages and shorter hours, he unhesitatingly and unblushingly displaces the farm laborer, and if the farmer had should seek to take his place under a strike, he will break his wrists, abuse him and call him a scab. Every strike west of the Mississippi—in fact, in some degree, every strike in the United States—affects the California farmer and his honest, efficient farm laborer. The engineer, mechanic and other skilled laborer, who voluntarily deserts his employment, will go to the country to harvest, make hay, pick fruit and cure it and do any kind of farm labor, run engines in mills and mines, at less wages. In no better way is the inhumanity of man to man shown than by the striker to the farm laborer.

FINALLY.—Let the farmer not give over politics to the wardman, strikes to the walking delegate, but let him use every legitimate power and influence to encourage and support the farm hand, demand efficiency, sobriety and frugality in his help, to minimize the power of those who prey upon their conditions, save his laborer from those who take advantage of him, from the snares which beset him, and employ only those who are qualified to do his work and afford him every possible opportunity to continue temperate, industrious and skilled and seek to make him and his family permanent residents; and colonize his help about him and afford them advantages of culture equal to their station in life, bring his laborers closer

to him and within his acquaintance, exercise his own best judgment and make his land produce the highest yield by diversified scientific farming and the exercise of mature experience. Doing this, he will in the end solve the problem of successful farming and of efficient farm labor.

GOOD ROADS.

Thoughts for the Coming Legislature.

By MR. V. V. LE ROY, at the Pomona Farmers' Club Institute.

The general public is now very largely in favor of good roads, if they can be obtained by some method of taxation that will be just and equitable. This country has been raising millions of dollars' road taxes and spreading it over highways so thin that there has been no perceptible improvement for a century, except in a few States. Proper legislation has proven the one thing needful to take the stream of wasted taxes and turn it into hard, smooth, permanent highways; hence, as I said in the beginning, proper legislation is now the most important division of the road problem.

STATE LAWS.—Long before any other State, in 1891, New Jersey passed a most comprehensive, successful and just road law. Its principles have been copied by most of the States having any pretension to a system of progressive, permanent road building. In brief, the Massachusetts law provides for three highway commissioners who have full charge of spending the road funds. A community desiring to improve its roads petitions the authorities, who refer it to the State engineer, who examines it and reports to the commissioners as to whether it is practicable to build or not. The commissioners proceed according to this report, as far as they have funds, in the order of date of petitions. The State pays the entire cost. Massachusetts has spent an average of \$600,000 a year for several years in building permanent highways. The law also provides that only a limited number of miles can be built in any county during the year.

Connecticut has also been active in permanent road building of late, appropriating from \$400,000 to \$500,000 each year. In that State the town pays one-half and the State one-half.

Rhode Island has a law that gives the highway commissioners the power to build in each town a half mile of sample permanent road, but has no other State aid.

California has highway commissioners, the result of a strong effort about ten years ago to formulate a good road law. These commissioners are allowed no funds except \$31,000 a year to defray expenses. Their work is entirely instructive.

Indiana has a law which is accomplishing a good work. It provides that, on petition, the commissioners may order an election to determine whether a new road shall be built and the county can issue bonds or levy a special tax to pay for it. Minnesota has a law similar to Indiana.

The New York legislation is nearer like that of New Jersey than any of the other States. While the New York Legislature was discussing this subject, they appointed themselves a committee of the whole and visited the good roads of New Jersey to inspect them and view the working of the first State aid road law. Outside of the above-mentioned States, legislation has done little for the betterment of our roads. In a number of States, including California, there are laws providing for the use of convict labor for improving roads or crushing stone for them.

THE NEW JERSEY LAW.—The summary of the New Jersey law is as follows: Upon petition of two-thirds of the properties on a public highway at least a mile long, the county board shall proceed to construct such road, after having advertised for bids, upon specifications approved by the State authorities, provided that in one year the amount shall not exceed $\frac{1}{2}$ of 1% of the tax levied for that year—the cost to be paid, 10% by the property owners along the road, 33 $\frac{1}{3}$ % by the State and 56 $\frac{2}{3}$ % by the county. The New York law differs in some minor details, and in that the State pays 50%, the abutting property owners 15% and the county 35%. Both these States have petitions filed asking for road improvements far beyond the appropriations every year. A great advantage in the New Jersey law is that the people have the say as to what roads shall be improved, if they are willing to pay a just proportion of the cost as well as their regular taxes. They are not everlastingly paying road taxes without seeing any real good accomplished. Another advantage under this law is that for every dollar spent there is a permanent gain. Under the present system, or lack of system, in most of the States, we could go on forever, and the last year before the judgment day we would still be hauling our produce through mud or dust. Several of the counties of New Jersey have now practically all their roads in a condition that is almost perfection. To build these roads the counties were bonded. After three years' experience with the improved roads, it was found that the people were paying less taxes for roads than ever before—that is, the tax levied for interest on bonds, sinking fund to pay off bonds, and for repairs on roads,

was considerably less than the road tax for patching up old roads had been, not mentioning the comfort, the pleasure, the increased value of property, the hauling of loads for two-thirds the former cost.

AN INSTANCE.—Suppose California had New Jersey's road law and it was desired to build a macadam road from Los Angeles to Pomona. Our highway commissioners, no doubt, would macadam the main arteries of travel, and where the roads were only lightly used a less expensive material could be taken. The cost of a good macadam road now is from \$3000 to \$5000 a mile. A few years ago, before the advent of improved machinery, it was nearly double these figures. At, say, \$4000 a mile, with the distance 30 miles, the cost would be \$120,000. Pomona is assessed \$2,056,000, the county \$103,300,000, the State, in round numbers, about \$1,400,000,000. The State's proportion of the cost would be \$40,000, or 1 cent on \$350 of assessed valuation; the county \$68,000, or 70 cents on \$1000. You are now paying 60 cents per \$1000. Pomona's assessment would be for the State \$57 and for the county \$1320, or a total of \$1377—about 68 cents on \$1000 of assessed valuation. It would be but a few years, under such a law, before we could be traveling all over our State on the finest of smooth, hard highways, a delight to ourselves and a great attraction to our tourist friends. In fact, they would pay for themselves a hundredfold in direct and indirect benefits. At the time Los Angeles county is building this 30 miles, all the other counties would be building their proportion, so that, almost before we knew it, our road proposition would be solved, as it has been in New Jersey.

To build a stretch of 30 miles of good roads, as the proportion in one year for this county under this law, the State would have to appropriate \$560,000, or 40 cents on \$1000 of her assessed valuation. Massachusetts has averaged more than this for several years.

A CHANCE TO VOTE.—At the last Legislature there was passed an amendment to the Constitution, allowing State aid in road building, such as New Jersey has. This amendment we will vote upon this fall. Every one here should work for its passage, and next year, with as good a Legislature as the last, we will have a State road law that will cause systematic improvement of our highways.

THE IRRIGATOR.

The Arid Lands.

In view of the new law for the reclamation of arid lands by using funds from sale of public lands for their own development, to which we have previously alluded, a description of the arid region and its relation to the other regions of the country is pertinent. Such will be found in the report of the Geological Survey when it shall be printed, and of which we have secured an outline for immediate use.

The arid regions of the United States include about two-fifths of its entire area, and extend from about the middle of the continent westward nearly to the Pacific ocean. A broad intermediate sub-arid or sub-humid belt, near the center of the United States, extends over North Dakota, South Dakota, western Nebraska, western Kansas, and into Oklahoma and the panhandle of Texas. In very wet years the sub-humid region creeps up to the foothills of the Rocky mountains. During dry years the greater part of the plains region west of the Missouri becomes semi-arid. Arid regions are those in which the average annual rainfall is 20 inches or less. Large tracts of Canada and Mexico, as well as of the United States, and a great part of the countries of the old world, are, according to our standard, arid. Irrigation was the basis of the agriculture and, therefore, of the civilization of many of the ancient peoples, a fact of much significance to us.

WHY THEY ARE ARID.—If the surface of the globe were flat the rains would probably be distributed uniformly in broad bands parallel to the equator. But the uniform movement of the atmosphere is interfered with by lofty mountain masses. In the United States as a whole the general movement of the atmosphere is from west to east. The damp winds from the Pacific deposit their moisture on the high masses of the Sierra Nevada in the winter and on the Rocky mountains in the summer, leaving the broad lower plains lying east of each great mountain mass dry, sterile and desert-like. Thus the mountain ranges are well watered, while the lowlands are parched with drouth. These arid lands are, however, covered with a more or less scanty vegetation, only a small per cent being true desert lands, such as the Utah desert, west of the Great Salt Lake, and the Mohave desert, in southern California, near the Colorado river.

THE VACANT LANDS.—One-third of the United States, exclusive of Alaska and outlying possessions, consists of vacant public lands. These lands lie for the most part in the arid region, and crops cannot be produced upon them, nor settlers take them up for homesteads, until a sufficient supply of water has been obtained. Then crops are abundant. It is for

the interest of the public at large to have all of these good agricultural lands utilized. Who shall make their occupation by settlers possible? The answer must come from the lawmakers of the country, and they must be in possession of the facts in order to act intelligently. The laws governing the disposal of the public lands have been drawn almost wholly with reference to the lands of the Ohio and the Mississippi valleys, with their sufficient rainfall. This rectangular system of subdivision of the public lands has been found detrimental to the best growth of the western two-fifths of the United States, because attention has been concentrated upon land titles, whereas first thought should have been given to water rights, through which alone the land has value. To remedy this evil for the remaining public lands, and to gather the facts upon which intelligent action can be based, is patriotic duty. These facts pertain first of all to the water supply and its limitations.

SERVICE OF IRRIGATION.—Irrigation, which concerns all citizens of the United States and their children's children, is the key to this situation. It is the duty of the highest citizenship to provide a hundred homes for independent farmers rather than to permit the land to be taken up as one or two great stock ranches, controlled by non-residents and furnishing employment to a few nomadic herders.

The higher mountain slopes and mesas have a covering of trees. Within the arid and semi-arid districts of the Western States nearly 120,000,000 acres are covered with woodland, and, in addition, more than 75,000,000 acres are covered with commercial timber. About 470,000,000 acres are grazing land. Thus, as to area, the grazing industry will probably always be the great industrial pursuit. The open range of the arid region may support one cow to every 20 acres. The same land watered may support ten cows to every 20 acres, or, in orchards, may support five persons to 20 acres. The open range may sell for 50 cents an acre; watered, it may be worth \$50 an acre, or, in orchards, \$500 an acre. The grazing land has the greatest extent and the least value, the irrigated land the least extent and the greatest value.

THE FORESTS.—The forests of the arid region mark the greatest rainfall and also the sources of the streams. In obedience to public sentiment the Government has already set aside many millions of acres of forest and woodland, primarily for the supposed beneficial influence of forests upon stream flow. The open grazing lands of the arid West have had and still have their history of conflicts between the interests and the persons of the settlers, the cattlemen, the sheepmen and the lumbermen. So uncertain are the conditions surrounding the use of the public lands for grazing purposes that practically all of the farmers and the irrigators of the arid region, as well as the stockmen, ask for legislation by which temporary rights in the form of licenses can be had to the use of the forage, pending final settlement of the lands. As it is now, the ranges are frequently so overstocked that the valuable forage plants are eaten down and destroyed. This matter of grazing in the West, being of fundamental concern in the arid region, is constantly brought before the hydrographer, and it has an intimate relation to the development of irrigation and the complete utilization of the water resources of the public domain.

THE DESERTS.—Some of the actual desert lands in the United States produce nothing, even when watered, as, for example, the broad flats adjacent to the Great Salt Lake in Utah and the lands around the Humboldt, Carson and Walker sinks in Nevada. Others, like the Mohave desert, near the Colorado river, in southeastern California, produce large crops when watered. Portions of these desert lands, therefore, are reclaimable by artesian wells or by reservoirs for storing the intermittent floods of the small streams flowing from the bordering mountains. It is most important that thorough geologic examinations should ascertain the practicability of obtaining water by deep wells, and that such examinations should be verified by drilling a few wells to a depth sufficient to determine for a large desert area whether an artesian flow can be surely obtained.

A New Book on Irrigation.

"Irrigation Farming," by Lucius M. Wilcox of Colorado, has been reissued in enlarged edition. The first edition was largely occupied with Colorado practices which came under the author's observation, but the new edition has followed the fashion of the day and embodies expansion. The principal chapters treat very fully of the advantages of irrigation; relations of soils to irrigation; treatment of alkali; water supply; canal construction; reservoirs and ponds; pipes for irrigation purposes; flumes and their structure; duty and measurement of water; methods of applying water; irrigation of field crops, the garden, the orchard, the vineyard and small fruits; all about alfalfa; windmills and pumps; devices, appliances and contrivances; subirrigation and subsoiling; seepage and drainage; electricity in irrigation; winter irrigation; irrigation in humid regions; common law of irrigation; glossary of irrigation terms, etc. The volume is profusely illustrated and well printed. It can be furnished through the PACIFIC RURAL PRESS for \$2 per copy, postpaid.

SHEEP AND WOOL.

Sheep Farming for Profit.

Now that wool prices and mutton prices are good and have a good outlook also, perhaps some readers will be interested in the progress of sheep farming in California instead of ranging, which has less opportunity than formerly in this State. The following suggestions, taken from an address by J. H. Dixon before a recent farmers' convention in Wisconsin, may be found helpful:

STUDY THE SHEEP.—A flock of sheep cannot be handled or fattened successfully any length of time without a close observance of their habits and peculiarities. There are a great many little things which require the attention of a successful shepherd that may seem trivial, yet they have much to do with the comfort, thrift and profit of the flock. The saying that "the eye of the master fattens" is nowhere more applicable than in the sheep fold. The competent shepherd acquires a trained eye that detects at a glance any evidence of thrift and well-doing, or the reverse. Attention to these little details, accompanied by regular and quiet habits, liberal feeding, right selections, with stability of purpose, constitutes the keynote to successful sheep husbandry. Nothing contributes more to good results than contentment and quiet surroundings. The shepherd who disturbs the quiet and comfort of his flock every time he goes about it should quit the sheep business immediately. Hence the method by which sheep husbandry can be made profitable must be learned, just as every other business should be, before the person engaging in it can expect to find it profitable.

The breeding or mating season seems to be one that is filled with important and anxious results. The influence of a single ram goes down through the flock for generations. He may leave his mark of excellence or give us work in weeding out, year by year, his faulty descendants. And as the ram is generally conceded to be half the flock we cannot too highly emphasize the possibilities for improvement or degeneracy involved in the selection of a poor ram. Of course, a perfect ram cannot cover the defects of a poor mother. Constitution, appetite and milk are necessary in the ewe for bringing up a good lamb.

SHEEP YARDS AND RATIONS.—My sheep have a yard of their own. I separate into as small flocks as convenient. They do enough better to pay for the trouble. Clover is the ideal hay for sheep, but I have had equally good results with corn fodder. Timothy and marsh hay are fairly good if cut early and supplemented with a liberal grain ration. My grain ration is usually bran, oats and corn, according to their relative cost, time of year and kind of sheep, and for what purpose they are being fed. This grain ration is placed in troughs in the yard, and usually once a day. During the middle of the day they get cornstalks or shredded cornstalks in the yard. I feed hay twice a day in the barn in racks with bottoms in them.

I never allow them access to hay or straw stacks and always keep plenty of good water and salt before them. Thus fed and cared for during the winter, they should come to spring or lambing season in good shape. I always save some of my best hay and corn fodder until then. If there is any time of the year that breeding ewes should be given extra care it is then. Another reason is that from the middle of March to grass they are more apt to get off feed and hence be more dainty about what they eat. During this season I feed plenty of bran, roots or potatoes, and their grain ration I feed twice a day.

I always tag or shear my sheep before turning into pasture or before lambing season, as it saves a great deal of trouble in starting the lambs. I usually have my lambs come from the middle of March to May 1. [They should, of course, be much earlier in California.] See that every lamb gets started. If the ewe hasn't enough milk at first, feed it a few times with warm milk from a bottle. Have lamb creep where they may go in or out at will. Place clean feed in it every day. A little feed stimulates the digestive machinery and so creates more appetite. More appetite means more feed, consequently more growth. In other words, early maturity is due to the cultivation of the appetite from the beginning of the life of the lamb.

To get back to the shearing question: Take the wool off just as soon as the weather seems settled and warm enough to admit of it with safety to the sheep. The practice of shearing before turning to pasture is fast coming into favor—at least in my locality. It makes it much easier to start the lambs, the wool is much whiter and cleaner, hence more salable. The sheep do better than if allowed to run until June. They suffer no drawbacks if kept out of storms and housed a little closer for a few days. They will be in better shape to stand the hot sun and pesky flies than sheep sheared in June. This is also the best time to cull out, as you can readily see which are inferior in fleece and as breeders. Mark them so you will readily know them when selling time comes. Do your own selecting and always keep the best.

GOOD SHEEP FEEDS.—After sheep are sheared and turned to pasture with good shade, pure water and

salt they need but little attention, though that little is necessary, until the time when the lambs should be weaned and placed in a field away from their mothers. This field should contain the best feed possible. Put the ewes in as dry a pasture as you have—for a few days, at least—in order to dry them up. I always strip them out two or three times, so as to make sure that none are spoiled. Afterward give as good feed as convenient. In order to get good fall feed for sheep I sow clover, rape and turnip seed in all my small grain in the spring, and if I do not get good feed it is because of an unusually poor season for such.

Do not keep more sheep than you have first-class arrangements for. Do not make airship calculations and then quarrel with the sheep because your dreams are not realized. Do not depend too much upon tariffs or anything outside of your judgment and energy to increase your income from the flock. Do not abandon sheep husbandry because prices are temporarily unsatisfactory, or jump head over heels to expand your business when a boom sets in. Wool and mutton, like everything else, will vary in price, and the changes in price will come faster than any man can change his business without sacrifice.

THE BOTANIST.

A Peculiar Dry Land Plant.

The University of Arizona Agricultural Experiment Station in its series of "Timely Hints to Farmers" gives an interesting discussion of the fog-fruit, or *Lippia nodiflora*, as an economic plant. The fog-fruit is a member of the same family of plants as the lantanas or verbenas. The genus *Lippia* contains about 130 species, of which 116 are inhabitants of the Western Hemisphere. Of this latter number, 96 are indigenous to South America and 4 others occur in both American continents. From the above it is readily seen that the plants of this genus are typically American, and frequenters of tropical and subtropical regions.

THE PLANT.—*Lippia nodiflora* is found throughout the tropics, occurring in both hemispheres and four of the five continents. It extends north from the American tropics through Central America and Mexico into California, Texas and the Gulf and South Atlantic States, occurring principally along sandy shores and water courses. The fog-fruit is a perennial, herbaceous, much-branched creeping plant, the stems of which root extensively at the nodes. The thickened, opposite leaves are 1 inch long or less, mostly blunt at the tips, and rather sharply saw-toothed above. The roots become greatly thickened below during the autumn, and this reserve food-supply undoubtedly enables the plant to begin growth in the spring with little or no rain, and also to maintain itself during long adverse periods.

The two other species of similar habits and appearance, *L. lanceolata* and *L. cuneifolia*, which occur in the United States—the former in the eastern and central portions, the latter extending from South Dakota to Texas and Arizona—present characters which indicate that they are less suited to our climatic conditions.

NOT GOOD FOR ALKALI.—It might reasonably be expected, on account of the very general distribution of *L. nodiflora* and especially since it occurs so abundantly along sandy shores, that the species would be strongly alkali resistant. Experiment, however, does not bear out the assumption. Cuttings and rooted plants that grew rapidly in ordinary soil failed completely in one intensely alkaline. Further, when a mixture of white alkaline salts had been applied to the soil at the rate of 1700 pounds to the acre, the plants stopped flowering and the leaves turned yellowish and began to die; when these salts had been added at the rate of 5000 pounds to the acre, 95% of the leaves died. Black alkali in the same quantity and under similar conditions gave at least as convincing results. In connection with this, it should be stated that the soil in which these plants grew is somewhat alkaline, in fact so much so that roses do not flourish in it from year to year, while the fog-fruit experiences no difficulty. *Lippia nodiflora* may be considered, then, as only slightly alkali resistant. It can endure without injury, however, our extremes of temperature (from 10° F. in winter to 110° F. in summer) and is a remarkable drouth resister.

DROUTH RESISTANT.—Recent observations indicate that *Lippia nodiflora* can maintain a continuous layer of green with a less amount of water than any other desirable plant within our borders. This is in part due to its manner of growth, as well as to its modifications for the conservation of the water and food supply. Small plants were set out along the storm-water embankments on the Experiment Station Range in January, 1901, spread so rapidly during that favorable season that by fall each plant covered several square feet of surface. During the seven months beginning November 1, 1901, 1.05 inches of rain fell on this range, and at the present time, at least one-half of the plants are in blossom, and cover

the surface with a green mat. On the remaining plants the leaves have mostly dried up; but the semi-woody stems remain green and will undoubtedly begin growth when the rain falls.

USES.—*Lippia nodiflora* is not in any sense of the word a forage producer, since it develops a relatively limited vegetative growth, which is firmly fixed to the earth. It has also been observed that grazing animals entertain a dislike for the plant growth, and this being the case, the plant becomes all the more valuable for what it is primarily intended; viz., a sand and soil binder. When set 2 feet apart in favorable situations, it was observed that well-rooted plants of the fog-fruit covered the surface completely during one season's growth; and there is every reason to believe that it will do equally well in moist, sandy washes, since it favors these locations. It should be set in those situations which are not liable to excessive erosion and in all the smaller rapidly growing washes. As the surface of these washes becomes covered over with a carpet-like mat of *Lippia*, cutting will inevitably decrease. Thus certain of our native grasses will be enabled to secure a hold, and what might be developed into a deep wash may eventually become a large forage producing area. *Lippia nodiflora* may also prove equally valuable when planted along reservoir and storm-water embankments, since, as before, it will bind the soil firmly and prevent washing. Thus far observed the fog-fruit develops no fertile seed, and, should this prove to be the case, the plant is precluded as a possible weed from irrigated fields, even though grown along reservoir dams and irrigation ditches. Moreover, the absence of underground stems, such as are common to Johnson grass, makes it easy to destroy the plant.

AS A LAWN PLANT.—Our plant should not be overlooked as an ornamental one. It can be grown successfully as a lawn plant, in which case it forms a smooth carpet of green interspersed with many small, capitate flower-clusters of rose-purple, varying to nearly white. In general, it gives all the effect of a white clover lawn, though forming a more compact mass and not requiring the use of a lawn mower. In the shade of walls, shrubs or trees it tends to grow taller, loses its carpet-like formation and seldom blossoms; hence, it should not be used in a densely shaded lawn. The fog-fruit can be especially recommended for planting among rocks, when it is desirable to hide them from view. *Lippia nodiflora*, like other creeping plants, will not endure excessive tramping, since the stems tend to die back on being injured.

The best time to plant the fog-fruit is during the spring and summer months, when, if well watered, it will be almost certain to secure a good start. A method commonly used in Egypt is to chop the stems in 1 or 2 inch lengths and sow in drills. Since the cuttings root very readily, there is no reason why this plan could not be utilized here, if the soil is kept sufficiently moist; nevertheless, the plan was not a success at the station this year. A surer way is to use rooted plants, and set them about a foot apart in the row. It should be borne in mind that the plants must be watered frequently until they have secured a permanent hold, and even after that time, one will be well repaid for sprinkling the lawn at least once a week.

This station at Tucson will endeavor to furnish plants of *Lippia nodiflora* in limited quantities to all who may apply. When received, it should be planted in rows 1 or 2 feet apart, in well-watered and well-prepared soil which is reasonably free from alkali. If it is desirable to increase the stock of plants more rapidly, cuttings 2 or 3 inches long may be made from the stems of the growing plants, and set out in the usual manner, care being taken to keep the soil quite moist, and in hot weather, where possible, to shade the sets with a protective mulch until rooted. When a permanent supply of these plants has been assured, they may be transplanted as desired to washes and other similar situations, and to the lawn; or, if found convenient, the plants can be set directly in either of the above locations. It will be very desirable, however, to have a stock of plants to draw from, since one may then plant when and where he desires, and also, when possible, take advantage of favorable weather conditions.

The Biggest Sequoia.

Dr. Norman D. Kelly, himself a lover of the woods and the mountains, and John Muir, the famous naturalist, returned Sunday evening from a trip beyond Converse Basin, undertaken especially to see the recently discovered Sequoia Gigantea, reported to be the largest in the world, says the Fresno Republican. They found the huge growth in Rob Roy canyon, back of Converse Basin, and upon applying the tape line it was found to be undoubtedly the largest tree in the world. It measured at the base 109 feet, and 4 feet above the ground 97 feet. Mr. Muir was greatly pleased with it, however. He says it is a magnificent specimen, keeping its shape well, and giving indications of healthy growth. This giant of the forest is safe from the woodman's axe, as it is just within the reserve. It is larger than General Sherman and General Grant, which heretofore were the recognized monsters of the forest.

Agricultural Review.

BUTTE.

BARBED WIRE FOR TELEPHONES.—Record-Union: "Within a year and probably in a much shorter time the farmers of Butte county generally will be in a position to enjoy the benefits of the telephone as they have not in the past," said G. L. Barham of the Sunset Telephone Co. "In San Joaquin and several other counties the Sunset Co. has taken up the idea of using the barbed wire fences for telephone purposes, and with such success that the system will undoubtedly be extended in various parts of the State where the conditions are favorable." The work of installing a telephone system, where there are continuous lines of barbed wire, is nominal as compared with that of establishing a new line. Naturally the wire must be continuous, but there is no necessity of careful insulation with the system employed for this service. The barbed wire can be used for party lines, so that as many as desire can be patrons. For a certain number of patrons the company will build a main line to extend out of town a distance of about a mile to be connected with the country line. Phones will be put in for patrons and a small charge made for the switching service.

FRESNO.

A DRIED FRUIT ASSOCIATION.—Enterprise: Fresno growers of dried fruit are endeavoring to organize an association whereby they may co-operate in selling and distributing their product. Owing to the low prices for dried fruit, the growers think it is time to make an effort to combine and bull the market. Jno. C. Nourse, prominent in the work of organizing the fruit men, says that the market price is too low, considering the Eastern demand for our fruit. He hopes to secure a sufficient number of growers to control fifty carloads of fruit this week, and expects growers at other points in the State to organize co-operative companies for handling their product.

PRIZE PEACHES FROM A TWO-YEAR-OLD TREE.—Republican: C. F. Wyer and Taylor Albin of the Chamber of Commerce were in the colonies securing fruit for the replenishing of the Chamber's exhibits, and secured some very fine specimens. From A. B. Smith's orchard, north of town, was secured a box of magnificent Orange cling peaches. Eight of these were picked from a two-year-old tree and were among the handsomest, largest peaches secured for the exhibit this year. Mr. Wyer weighed six of them, finding them to average 14½ ounces each. In color and form they were perfect, and eight of them just filled one of the big glass jars used to preserve the fruit in.

KINGS.

ANTHRAX IN CATTLE.—Hanford Journal: It is reported that large bands of cattle grazing south of Hanford and Le-moore, near the lake, are afflicted with anthrax, and that some are dying. Miller & Lux are losing a good many. Dr. Twining, the bacteriologist from Fresno, has made two trips to this county recently, and he and Frank Griffith, the veterinary, have vaccinated a large number of cattle in the locality referred to, for anthrax, though the gentlemen do not care to converse in regard to the matter, Mr. Griffith, who is the county veterinary, saying that his monthly report to the Board of Supervisors would contain all information of the matter.

THE LATEST—A COW MILKER.—One of the ranchers down on the lake has discovered a new way for milking cows, which has done away with the work of the dairy hands. The rancher the other morning found half his cows already milked by a lot of pigs. The cows are willing, and take to the pigs as they would to calves. While fresh milk is certainly a fine pig fattener, it is doubtful if the new milker becomes popular, even if pork is at a high price.

LOS ANGELES.

NEW FRUIT ASSOCIATION.—Pomona Progress: A number of Pomona growers of deciduous fruit who have been more or less engaged in the drying business individually, have incorporated as the Pomona Cured Fruit Union, with capital stock \$25,000. The directors are H. B. Hansen, J. E. Crawford, E. M. Wright, W. L. Benson and A. G. Whiting.

NAPA.

GREAT LACK OF ORCHARD HELP.—Register: The largest crops of prunes and peaches in many years have been grown in orchards in the vicinity of Napa this year, but as the time for harvest rolls around the orchardist begins to realize that a most serious condition confronts him. It is the scarcity of labor. Peaches have been ripe for some time and in some

instances the fruit has rotted on the trees because the grower has been unable to secure the help needed. With the prune harvest just beginning it is feared that much will be lost to the orchardist on account of the scarcity of help. One prominent fruit man suggests that public schools be closed for a few weeks. The time thus lost could be made up again in the winter or next spring, and great benefit would undoubtedly accrue to the orchardists.

SAN DIEGO.

MARVELOUS GROWTH.—Imperial Press: The Weed Bros., who have a fine place below the main channel south of this city, have a field of Kaffir corn and one of millet which are record breakers for rapid growth. Just thirty-four days have passed since the two fields were planted and the corn is 6 feet 3 inches in height and the millet is 3 feet 4 inches, and not headed out.

OSTRICH CHICKS.—Union: At the ostrich farm at Coronado it takes a bale of hay, cut up, and a sack of barley to feed fifty-three ostriches. The chicks are as inquisitive as a monkey and will snap a button off your coat if an opportunity offers. The old males are fighters; can split fence boards with a kick; but when they get real mad lie down and twist their necks and flap their wings like a skirt dancer. Young chicks a few weeks old are worth \$25 on the market.

DEVELOPING THE DESERT.—Union: A notice appropriating 200,000 miners' inches of water from the Colorado river in the eastern part of this county has been filed in the County Recorder's office by W. F. Timmons, A. Modesta, R. P. H. Laney, F. M. Riley and John McGinty. They also claim a right-of-way 500 feet in width, and section 29, township 15 south, range 2 west, as a reservoir site. They state to be their intention to build a canal 60 feet wide on the bottom and 80 feet on the top to convey the water onto the lands in that direction. The canal is to cross the Yuma Indian reservation, to a point known as El Rio, near the Southern Pacific railroad.

SAN JOAQUIN.

IRRIGATING GRAPES.—Lodi Herald: Hershel Mason, who is among the heaviest of this year's early Tokay shippers, is confident that he made no mistake by irrigating his 20-acre vineyard. This year was his first practical experience in vine irrigation. He undertook it against the advice of well meaning friends, whose theory was that the grapes under irrigation would crack, would mildew and would be late in maturing. Mr. Mason says that his experience has taught him that the reverse conditions, rather than the gloomy predictions of his friends, prevail. The berries are larger, have refused to crack or mildew, notwithstanding the fact that he did not follow the usual process of sulphuring, and are among the very first in the market. Mr. Mason is also of the opinion that his Tokays suffered less sun blister than the grapes on irrigated vines. He expects much better results next year.

BIG MONEY IN CHEVALIER BARLEY.—Stockton Mail: Lorenzen Bros. of Banta sold M. P. Stein & Co. last week the first large lot of Chevalier barley raised in San Joaquin county. Small lots have been raised from time to time, but no great area was devoted to it before. They sowed about 200 acres to the grain and harvested an average of twenty-two sacks to the acre. Their crop, which weighed 120 pounds to the sack, brought \$1.16½ per cental.

KITTEN MAKES FRIENDS WITH A LITTER OF PIGS.—Lodi Sentinel: N. M. Howard, one of New Hope's enterprising farmers, has on his ranch near that place a sight that is seldom seen. Mr. Howard raises some hogs, and upon driving a sow with her litter into the barnyard he was surprised to find among the small pigs a kitten running with them. The kitten is living with the pigs and gets its nourishment in the same way that the young porkers do. The kitten, Mr. Howard thinks, was left on the roadside by some one and had found the pigs in the adjoining field.

CLEVER GRAIN ELEVATOR.—Stockton Independent: A clever elevator for piling sacked wheat in warehouses has been invented by ex-Mayor W. B. Harrison and Joe Del of this city, and those who have seen the device work say that it will prove a useful machine. The model is being used in warehouse No. 5 of the Farmers' Union and is an entire success. It is made up of an electric motor on a platform mounted on wheels so that the elevator can be moved to any part of the building. The framework of this particular one stands about 14 feet high, but it can be made any height desired. The current is secured from a cable, which runs through the building. Five sacks of grain, or a truckload, are placed on the lift, and

when the machinery is started in motion the wheat is conveyed to and dumped on a table that allows the grain to slide on to the pile, where men place it in position. The old way of handling grain, where it had to be piled from 10 to 18 feet high, was to pass it up in relays by men on tiers. This is very hard work, and in the close warehouses men must be very strong to do the work. The new machine is attracting a lot of attention and grain men declare that it will come into general use as soon as the inventors place it on the market. About 900 sacks an hour can be piled with the one being tested, but of course the elevator could be made larger or of a sufficient size to handle two or three truckloads of five sacks each.

SANTA CLARA.

GOOD DEMAND FOR WINE GRAPES.—San Jose Mercury: The agents of the various wine interests are already making contracts with the growers at figures as high as \$26 per ton. These figures are of course for excellent fruit, but growers are not selling freely. In fact, many vineyardists are holding off for \$30 a ton.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: Bellefleurs are running to large sizes this year, and they never looked better in this valley, particularly on young trees.—The Simpson Hack Fruit Co. contracted last week thirteen cars of Bellefleurs at from 85 to 95 cents per box.—The thirty-one varieties of resistant apple scions received from New Zealand a few weeks ago by Jas. Waters were grafted to five-year-old trees and are doing nicely. Many of them are budding. Mr. Waters thinks that he will not lose more than three scions out of the entire shipment.—The woolly aphids have been almost completely cleaned out in Pajaro valley. The beneficial insects have done their work swiftly and well. The greater part of the good work has been performed by ladybirds, lace-wing flies and syrphus flies. There have been an unusually large number of lace-wing flies here this year, and the scope of the ladybirds' activity has been extensive. The woolly aphids stands little show where these beneficial insects abound in large numbers.

SUTTER.

EFFECTS OF FERTILIZATION.—Sutter County Farmer: At the Starr orchard above Yuba City there is an excellent example of the effects of fertilization. Last winter and spring some experiments were made with nitrate of soda and the Thomas phosphate and the trees have responded remarkably well to the treatment. On a block of prune trees where the crop has not been very heavy for several years the phosphate was used and the foliage made a much better growth and the prunes did not drop as was usually the case. The fruit set well, making a big crop and good size. Especially on old orchards is this treatment beneficial.

BEAN CROP LOOKING WELL.—The bean fields in District 70 present a fine appearance now, and if the weather holds good this fall there will be a big crop at a good profit. On the land of Louis Tarke, part of which he has leased to other parties, there are over 450 acres of fine beans, the vines now covering the ground and full of big pods. It will require considerable work to harvest the crop, but the price is fair and the yield promises to be extra large. Along the Sacramento river there are also many hundred acres of equally good beans.

DRIED PEACHES COMING IN.—The dried peach crop is coming off the trays in good condition and in a week or two the bulk of the same will be ready for the market. Owing to the large amount of fruit returned to the driers from the canneries this season there will be considerable that will not be first-class. The Muir crop and other similar varieties are, however, up to the standard and should command a good price. The local buyers are quoting rates from 4½ cents to 5½ cents per pound.

ALMOND HARVEST NOW ON.—Independent: All the local almond growers are now busy harvesting their crops. A number have estimated this year's crop the largest in years. Prices are high, and altogether the almond men have much to be thankful for. The majority of the growers have sold their crops, many getting 10 cents.

HEAVY YIELD OF FIGS.—E. G. Van Arsdale, one of our heaviest fig growers, says that the crop of White Adriatics will be larger this year than ever before. Pickers are now at work in his orchard. He says all the bearing trees in this locality are burdened with fruit. The White Adriatics is the only variety now bearing in Sutter county. There are several young orchards of the Smyrna in the county, but none are bearing. The price will be \$50 per ton or 2½ cents per pound. This is 1 cent lower than in former years,

and the drop in the price is attributed to the cheap, sloppy goods run in on the market from other sections.

TULARE.

FEED FOR HONEY.—Register: The honey crop of California will be light this year. Southern California will have practically none, and Tulare county will not have more than half a crop. This is because the season was so late that many blossoming plants did not start at all this year, the rains not coming until the 22d of February, which was too late. This is particularly the case with a lot of plants known as alkali weeds that bees depend on a good deal and that make honey, not quite as good perhaps as alfalfa, but good enough to command a ready market. The sunflower is a valuable honey plant for the bees also, making a good quality of honey and tiding over well such times as alfalfa is not in blossom. The early cutting of alfalfa for dairying purposes plays the mischief with the bee, which rejoices greatly when a farmer concludes to let his alfalfa crop go to seed, as many Tulare farmers are doing this year.

IT PAID TO IRRIGATE.—Last year W. B. Cartmill got a chance to water ninety acres of grain land which he got onto—plowed and harrowed as soon as possible, sowing the land along in the winter. That ninety acres irrigated in that way in the early summer yielded 875 sacks of wheat, whereas the rest, which was well cultivated but not irrigated, scarcely repaid the cost of harvesting, the machine cutting here and there over it, and mostly for hay at that. This year Mr. Cartmill has irrigated 175 acres for next year's crop.

FINE PEACHES.—Visalia Delta: Z. N. Pierpont of Farmersville brought to this city Monday a box of peaches grown on the A. A. Davis ranch near there that is certainly fine samples in the peach line. Some of the peaches on exhibition weighed twenty-two ounces and the gentleman says they were the average size. The fruit grew on a tree that was grafted March 23, 1901, to a three-year-old stalk, and the peaches taken from the trees weighed 375 pounds.

VENTURA.

THE GROUND SQUIRREL PEST.—Independent: Ground squirrels are doing very extensive damage to crops in the vicinity of Saticoy, and their attacks upon walnuts are causing growers much anxiety. The little animals are also very attentive to the Lima bean. A prominent grower of the above section says it is uncertain whether he or the squirrels will harvest his crop.

YUBA.

HOP NOTES.—Wheatland Four Corners: About the middle of next week the Wheatland hop season will close. The season has been a banner one for the hop picker, and it bids fair to be good for the grower. The picker has profited by the advance price paid and the condition of the hop which permitted larger pickings to be made. The 10 cents bonus on each hundred pounds given by the Dursts has brought out many "old pickers" who would prefer to stay home rather than to pick hops. This is the first season for years that the growers have been warranted in paying anything like a cent a pound for picking.

JAPS ATTACK WHITES.—A serious riot by Japanese ranch hands occurred on the place of T. B. Hutchins, about 15 miles above Marysville. It arose over a Japanese slapping a white boy. The father responded by knocking his son's assailant down. He was himself felled by the blow of a heavy fruit box in the hands of another Jap. The yard boss and several white men rushed to the rescue, but were met by flying hammers, boxes and rocks thrown by over a score of brown men and forced to retreat, pursued by the howling, infuriated Orientals. One Japanese succeeded in approaching the yard boss close enough to hit him on the head with a hammer, felling him to the ground in an unconscious condition. Others were badly hurt. The Japanese then sullenly retired and later scattered.

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THE HOME CIRCLE.

The Cloud,

I bring fresh showers for the thirsting flowers,
From the seas and the streams;
I bear light shade for the leaves when laid
In their noonday dreams.
From my wings are shaken the dews that waken
The sweet buds every one.
When rocked to rest on their mother's breast,
As she dances about the sun.

I wield the flail of of the lashing hail,
And whiten the green plains under,
And then again I dissolve it in rain,
And laugh as I pass in thunder.

I sift the snow on the mountains below,
And their great pines groan aghast;
And all the night 'tis my pillow white,
While I sleep in the arms of the blast.
Sublime on the towers of my skyey bowers
Lightning my pilot sits;
In a cavern under is fettered the thunder,
It struggles and howls by fits;
Over earth and ocean, with gentle motion,
This pilot is guiding me,
Lured by the love of the geni that move
In the depths of the purple sea;
Over the rills and the crags and the hills,
Over the lakes and the plains,
Wherever he dream, under mountain or stream,
The spirit he loves remains,
And I all the while, bask in heaven's blue smile,
Whilst he is dissolving in rains.

The sanguine Sunrise, with his meteor eyes,
And his burning plumes outspread,
Leaps on the back of my sailing rack,
When the morning star shines dead,
As on the jag of a mountain crag,
Which an earthquake rocks and swings,
An eagle alit one moment may sit
In the light of its golden wings.
And when Sunset may breathe from the lit sea beneath,
Its ardors of rest and of love,
And the crimson pall of eve may fall
From the depth of heaven above,
With wings folded I rest, on mine airy nest,
As still as a brooding dove.

That orb'd maiden, with white fire laden,
Whom mortals call the Moon,
Glides glimmering o'er my fleece-like floor,
By the midnight breezes strewn;
And wherever the beat of her unseen feet,
Which only the angels hear,
May have broken the roof of my tent's thin roof,
The stars peep behind her and peer;
And I laugh to see them whirl and flee,
Like a swarm of golden bees,
When I widen the rent in my wind-built tent,
Till the calm rivers, lakes and seas,
Like strips of the sky fallen through me
on high
Are each paved with the moon and these.

I bind the sun's throne with a burning zone,
And the moon's with a girdle of pearl;
The volcanoes are dim, and the stars reel and swim,
When the whirlwinds my banner unfurl.
From cape to cape, with a bridge-like shape,
Over a torrent sea,
Sunbeam-proof, I hang like a roof,
The mountains its columns be.
The triumphal arch through which I march
With hurricane, fire and snow,
When the powers of the air are chained to my chair,
Is the million-colored bow;
The sphere-fire above its soft colors wove,
While the moist-earth was laughing below.

I am the daughter of earth and water,
And the nursling of the sky;
I pass through the pores of the ocean and shores;
I change, but I cannot die.
For after the rain, when with never a stain,
The pavilion of heaven is bare,
And the winds and sunbeams, with their convex gleams,
Build up the blue dome of air,
I silently laugh at my own cenotaph,
And out of the caverns of rain,
Like a child from the womb, like a ghost from the tomb,
I arise and upbuild it again.

—Percy Bysshe Shelley.

Atlas.

His face is dark; the burden of the day
Rests on his shoulders; patiently he stands,
Supporting heaven itself in both his hands.
Ah, if he set it down, and went his way!

—Richard Askham.

Gideon Glasser, Miller.

With a punctiliousness that would have done credit to any of the old French martinets, Gideon Glasser, on the first day of each year for the past twenty-five, had appeared in the counting room of Messrs. Sharp, Ketchum & Law, and paid his yearly rental for the mill property leased by him.

Twenty-five thousand dollars had he carried to them, and just what amount he had left none could tell, but it was on rumor's tongue that the yearly balance exceeded this sum by five times. What became of it none could tell. No banks or depositories ever received a call from Gideon Glasser.

There was an air of mystery about his actions that led his fellows and neighbors to call him "Gideon the Mysterious." No confidants had he, and his only acquaintances were the patrons of the mill, who had never heard him repeat anything that threw any light on his past. All they knew was that twenty-five years had elapsed since the first day when he appeared, and leased the mill that ground the many bags of grain brought to him.

With but one exception, the community had never known him to go away except on the first day of the year to make his yearly rental payments. The one exception was fraught with much interest to all for, on his return, he brought with him a little miss of two summers; and upon whom, as time passed, he lavished what affection there seemed to be in his nature.

She grew into a fair-haired girl, then blossomed into one of the fairest types of womanhood, beloved for miles around; she was much sought for and courted by all the swains who gazed upon her. None were successful, and she had arrived at the age of twenty, heart whole and fancy free on the twenty-fifth date of the miller's departure to make his annual payments.

Who her parents were and where she came from none knew, as Gideon, on his return with his young protegee, simply stated she was only one of the thousand unfortunates left to battle with the world alone. Gossip connected her with with a page from his past life, but none knew.

His business transacted, Gideon Glasser, in accordance with his custom, seated himself in his wagon and prepared to drive to his distant home. He rode slowly, buried in thought, apparently not hearing the warning clang of the fire engines as they rushed down the thoroughfare in answer to an alarm.

Dozens of pedestrians shouted wildly, but Gideon heeded not. He turned directly in front of one of the ponderous machines to have his wagon dashed to pieces and himself thrown to the pavement, where he lay with a crushed skull. Kind people rushed to his assistance, but he was beyond earthly aid.

Rosaline Glasser, his adopted daughter, as she was known, had lost what had been to her a kind father. She had long thought there was no blood relationship between them, but she felt her loss and sincerely mourned his death.

Friends prevailed upon her after the last sad rites were over to accompany them to their homes. The mill was released to strangers and things rapidly resumed the same state as if Gideon Glasser had never been.

One inexplicable feature of his taking-off was that no will or property could be found, and it was known that the receipts of the mill had been up in the thousands every year. What had become of it all was the question that obstinately refused to be answered. The only paper left by the dead miller that seemed strange, and in keeping with his nature, was found in a small box, addressed to his adopted daughter, and which read as follows:

Dig my grave both wide and deep,
By the trees along the shore; and
The leaves may my mantle be—the
Gates remain closed forever more.

It evidently was his desire to be buried near the mill, and permission

was secured from the owners, and he slept the long sleep beneath the weeping willows which fringed the large pond.

Rosaline placed the crude pieces of poetry along with her other keepsakes and announced her determination to go to a distant city to earn her livelihood. She was the possessor of an exquisitely sweet voice, and had a musical education—secured by arduous work and natural ability. That was one thing that Gideon Glasser had not neglected, her education. Some of the best masters had been secured to teach Rosaline, and at his untimely taking off she was fitted to grace the home of the most fastidious and fashionable families.

* * * * *

"I love you, Rosaline, and want you for my wife," were the words that would have greeted the ears of any one that could have been present in one of the magnificent rooms of the stately mansion of the Hon. Frank McIntosh Jones, in the Empire City.

The speaker was a tall, handsome young man of about twenty-seven years, and the one to whom his remarks had been addressed was none other than Rosaline Glasser. Upon her departure from home, she sought and obtained a position as governess in the home of Hon. Frank M. Jones, where she had won the hearts of all by her gentle manner and bearing. Her two charges, the daughters of the house, worshiped her. The only son and junior partner in the mercantile establishment of Jones & Son also succumbed to her many graces, and had arrived at the point of asking her to complete his happiness by becoming his wife.

"I love you, Rosaline," he repeated, as he took her in his arms and gazed down at her flushed face. "Be my wife, darling, and make me the happiest man in this wide world."

Rosaline tried to escape from the arms which held her, but they were too strong for her feeble efforts. "It is all wrong, Frank," she said. "You know nothing of my parents, or of my early history, only that which I have told—"

"That is sufficient. I have talked with father and he is satisfied to have you for a daughter-in-law. Even if he objected it would make no difference to me; for I would marry you in spite of all. Do say that you will be my wife, and that you love me."

With the light of love shining from her clear eyes, she raised her face and the sweet lips formed "yes."

Some minutes later they left the room in search of the parental blessing, and, on arriving at the library door, found a warm welcome and the approval of Mr. Jones, Sr.

Rosaline had left the room to procure the papers left by the dead miller and now returned with them in her hand. Father and son slowly read and re-read them, and were on the point of passing them back to her when her lover caught his breath for an instant, then jumped to his feet with a shout.

The key has been found and the mystery shall be explained," he exclaimed, as he caught Rosaline's questioning glance.

"Look here," as he pointed to the crude verse that had been classed as one of the miller's eccentricities. "Read the first word of each line, and what do you get? 'Dig by the gates.' Well, I guess that's plain. He evidently has something buried there. Well, I'll go and dig, and will report in a day or two."

Twenty-four hours later Frank Jr. stood behind two draymen, who carried a large-sized iron-bound cask between them, and who, upon a command, deposited it upon the floor of the library. After explanations, Frank related how he had gone to the mill, drawn off the water from the pond and unearthed the cask as directed. Here it was, intact.

"I thought that you, Rosaline, should have the privilege of first gazing upon its contents, and now we will open it." He seized a hatchet and made short work of the hoops that tightly bound

the staves together. The blows soon severed the last one and the iron-bound cask fell apart. What a sight met their astonished gaze. Thousands of gold pieces, bank notes and a small tin box spread themselves over the floor.

Seizing the box Rosaline forced the cover and removed a paper which had been folded to fit inside. Tremblingly she opened it and let her eyes run over the closely-written page. When she had finished she passed it to her lover and asked him to read it aloud. This is what it contained, in part:

"To my beloved niece, Rosaline: When this meets your eye I shall have passed to the other world. My silence as to your parentage is here revealed. For reasons not necessary to mention, I became estranged from a sister who dashed the only happiness I knew from my lips. I swore revenge. She married Mr. R—, and when you were two years old I kidnapped and carried you to the mill, there to grow up as my own. The money is yours; I will it all to you. Forgive me for having robbed you of a mother's love, but I have tried to give the love of a father. Think not too harshly of your Uncle Wesley Thorndyke. Your father's name is Orlando K. Rothman, banker."

There could be no objection offered why Frank M. Jones, Jr., should not marry the daughter of the man who was president of the bank with which the firm of Jones & Son did business.—The Housekeeper.

A Strange Wooer.

Pitts is a sharp man, a man of business tact, and when Pitt goes into a shop he always gets the lowest cash price and says:

"Well, I'll look about, and if I don't find anything that suits me better I'll call and take this."

Pitts, like all sharp men, is partial to women, and young ones in particular. Now, quite lately Pitts said to himself: "I'm getting rather along in years and think I'll get married."

His business qualities would not let him wait, so off he travels and calls on a lady friend, opening the conversation by remarking that he would like to know what she thought about his getting married.

"Oh, Mr. Pitts, that is an affair in which I am not so very greatly interested, and I prefer to leave it with yourself."

"But," says Pitts, "you are interested, and, my dear girl, will you marry me?"

The young lady blushed very red, hesitated, and finally, as Pitts was very well to do in the world and morally, financially and politically of good standing in society, she accepted him, whereupon the matter-of-fact Pitts said:

"Well, well, I'll look about, and if I don't find anybody that suits me better than you I'll come back."—Pearson's Weekly.

How to Preserve Ferns.

Gather, during a walk through the woods, an armful of ferns, selecting perfect ones; lay smoothly between newspapers and put to press under a trunk. These may so remain until returning to the city.

Fill rose bowls half full of sand and stick these preserved ferns in them, placing them about your rooms making a woody spot all winter. If the ferns become dusty, wash gently and return to place. The smallest ferns may be used with fresh flowers for table, or bouquet for the dress, says Harper's Bazar.

To make a pretty table fernery, make a birch-bark box 6 inches wide, 9 long—or round if you prefer it—and 3 inches deep. Paste cloth around the edges inside to prevent bits of earth from finding their way out. Plant in the box roots of small ferns, filling the spaces with green moss or "running pine." Sprinkle every day and keep in a cool place at night, and your table fernery will keep fresh and green all summer.

A Good Parrot Story.

Our next door neighbor, writes a correspondent to Ashland Item, owns an amusing parrot which is always getting into mischief, but usually gets out again without much trouble to herself. When she has done anything for which she knows she ought to be punished, she holds her head to one side, and, eyeing her mistress, says in a singsong tone: "Polly is a good girl," until she sees her mistress smile; then she flaps her wings and cries out: "Hurrah! Polly is a good girl!" She has been allowed to go free in the garden, where she promenades back and forth on the walks, sunning herself, and warning off all intruders.

One morning a hen strayed out of the chicken yard and was quietly picking up her breakfast, when Poll marched up to her, and called out "Shoo!" in her shrill voice. The poor hen retreated to her own quarters, running as fast as she could, followed by Poll, who screamed "Shoo!" at every step.

A few days latter, Poll extended her morning walk into the chicken yard. Here, with her usual curiosity, she went peering into every corner till she came to the old hen on her nest. The hen made a dive for Poll's yellow head, but missed it. Poll, thinking discretion the better part of valor, turned to run, the hen, with wings wide spread, following close after.

As she ran, Poll screamed in her shrillest tones, "O Lord! O Lord!"

A member of the family, who had witnessed the performance, thought it time to interfere in Poll's behalf, as the angry hen was gaining on her. He ran out, stooping down held out his hand. Poll lost no time in traveling up to his shoulder. Then, from her high vantage-ground, she turned, and, looking down on her foe, screamed: "Hello there! shoo!"

The frightened hen returned to her nest as rapidly as she had come.

Progress in Farther India.

In far-inland Pie the Laos Governor sent his carriage to me for a drive, and I rubbed my eyes when I saw an equipment which would grace Fifth avenue, New York—rubber tires, shining wheels, luxurious upholstery, handsome harness and liveried coachman. In Chiangmai I was driven for hours over roads which were an amazement and a delight after the ridges and hollows which are euphemistically called roads in China. At Pitsanuloke, 250 miles from Bangkok, the neat, white-washed picket fences lining the river for more than a mile, the well-kept lawns of the public buildings, the elegance of the Siamese Club and the residences of the officials would greatly surprise a traveler who had expected to find a village of barbarians in this interior region of Siam. At Ke Kan, where I stopped for the night, there is not a single foreigner, and never has been, but we strolled for a long distance on a level, beautifully shaded, though narrow, street along the river bank. We saw a sign bearing the word "Postoffice" in English, Siamese and Chinese. We passed a telegraph office, and on the veranda of the magistrate's residence we saw two bicycles. Sunday, December 15, we camped near a hamlet in the heart of the mighty forest jungle, about as far from civilization, one might suppose, as it would be easy to get. But in the police station I found a telephone connecting with the telegraph office in Chiangmai, so that though I was on the other side of the planet from New York, 12,500 miles away from home and 600 miles in the interior of Farther India, I could have flashed a message to any point in Europe or America.—Arthur J. Brown, in the Great Round World.

Cool Drinks for Hot Weather.

Some day when the thermometer shows a sullen determination to climb, climb, climb, and you want to make your veranda a particularly alluring place to the chance visitor, serve with the palm-leaf fan a ginger-ale julep.

Put a scant cupful of granulated sugar into a glass pitcher and squeeze upon it the juice of six lemons. When it has dissolved stick half a dozen stalks of mint in the pitcher, bruising slightly some of the lower leaves between the thumb and the finger. Now add a cupful of pounded ice and then put in two bottles of ginger ale. Pour out at once.

Banana cup is a refreshing drink, that can be prepared beforehand and kept on tap. Rub the pulp of three bananas through a fine-wire sieve. Add the grated rind of half a lemon and the juice of one lemon and one orange; pour over this half a pint of boiling water, and put in a cool place for several hours. When quite cool, stir well together, sweeten to taste, add a wineglassful of sherry, with some cracked ice, and serve.

A grateful drink for luncheon on a hot day is iced coffee with orange flavor. One quart of strong coffee and two cupfuls sugar should be boiled together ten minutes. Allow this to cool, and pour into tall glasses; add to each cupful one tablespoonful of orange syrup, and the same amount of cream half whipped. Make the orange syrup by putting cut oranges in sugar, allowing it to stand for several hours, then strain off the juice. The combination of orange and coffee may not sound promising, but the result will certainly call forth enthusiasm.

Currant water is a wonderful quencher of thirst. To one quart of water add one cupful of sugar and two cupfuls of tart currant jelly. Boil till dissolved, then add the juice of three lemons and three oranges. Serve with chopped ice, with a slice of orange on top.—Brown Book.

A Solicitor's Experience.

I have a distinct remembrance of a curious business experience I had while at college. I was manager of the Junior Annual, and had been going the rounds of the city "rustling ads," as you say here at Stanford. I had been rather unsuccessful during the day, so late in the afternoon I determined on a long shot. I had been recommended by a friend to try to land the ad of a crematory (a new thing then), whose proprietor he knew. I went around, and was surprised to find the proprietor, a Mr. Smith, very willing to discuss my proposition. We must have talked together fully two hours. He asked every imaginable question as to terms, contract, and so forth, and I gave every imaginable answer. My fighting blood was up, and at last I persuaded him to sign a contract for a sum up in the hundreds. Was I happy? I arose and bid him good-afternoon with much effusion, slipped my contract blanks in my pocket and started out. As I was about to close the door from the outside, he called me back.

"Just a moment, Mr. Halsey."

"Yes, sir; what is it?" I replied, rather surprised.

"You understand, don't you, that this advertisement is to be taken out in trade?"—Prof. Halsey, in The Chaparral.

How to Cut Flowers.

It is the pride of every gardener occasionally to give a bunch of flowers of his own growing to friends who come to visit him, but, unhappily, both flowers and bunch are often spoiled in the course of preparation. Flowers should never be broken off from plants with the fingers; if the stem is at all tough the plant is dragged at and injured. Neither is the use of scissors desirable, says Home Chat. The best method of plucking is with the aid of a sharp knife, and the stem should not be cut straight across at right angles, but in a slanting direction.

In "making up" the bunch, too, the best or most striking blossom or blossoms should form the center, and they should be added to from outside, the bunch being turned round at intervals.

BRAGGE: I was knocked senseless by a cricket ball two years ago. The Boy in the Corner: When does yer expect ter get over it?

DOMESTIC ECONOMY.

Domestic Hints.

FRUIT ICE.—To one cup sugar add one cup cold water and boil until thick and stringy. Remove and put in a cold place, then place on ice till ice-cold. Have ready the fruit to be used—peaches or berries crushed with a little sugar. Whip into the syrup and freeze.

BOUILLON.—Four pounds beef, two pounds bone, two quarts cold water, one tablespoonful salt, four peppercorns, four cloves, one tablespoonful mixed herbs. Wash the meat and bones, add the water and heat slowly. Season, and simmer two hours. Boil down to three pints, strain, and remove the fat. Keep in cold place.

LAMB SALAD.—Two cups cold roast lamb, one cup cold boiled potatoes, two cups beets, two cucumber pickles. Cut the lamb and potato into neat cubes, the beets into small morsels. Arrange in a nest of lettuce. Mix the meat and potato and sprinkle with the chopped beets. Dress with mayonnaise in which onion juice takes the place of mustard. Garnish the mayonnaise with finely chopped pickle.

BEEFSTEAK AND MUSHROOMS.—Broil the steak about twelve minutes, turning often. When done lay it on a hot platter. Put one tablespoonful of flour and one tablespoonful of butter in a pan, and cook and stir until a golden brown; add one and a half cup of boiling water, a teaspoonful of kitchen bouquet, and one-half a can of mushrooms; season with salt and pepper and boil fifteen minutes; pour around the steak and serve.

BOILED ICING.—One cup of granulated sugar, five tablespoonfuls of boiling water, the white of one egg beaten to a stiff froth. Put the sugar and water over the fire and boil until it threads from the spoon; then turn it into the beaten egg, beat briskly for a few minutes, flavor with vanilla, lemon or almond, according to the cake. While the cake is still warm, sprinkle with flour and spread the icing on with a broad knife.

STUFFED PEPPERS.—Take three green peppers, wash them, then put them in hot grease and blanch until tender. Remove from the fire and again wipe the skins with a cloth. Cut off the tops and take out the seeds. Take one ounce of butter, chop up a few shallots and fry in the butter, adding a few chopped mushrooms. Season with tomato puree, thickened with breadcrumbs, and put this filling into the peppers. Place on the dish and serve with bechamel sauce.

FRENCH ROLLS.—Two quarts of sifted flour, a pint of warm milk, half a cup of butter melted in the milk, a quarter of a cup of sugar, three or four eggs, beaten light, a little salt, a half cake of compressed yeast dissolved in a little warm milk. Make a batter of the milk and flour, add the eggs and sugar, beat hard for fifteen minutes. Cover the pan and set to rise over night if for luncheon, in the morning if for tea. Knead well, but do not add any more flour. Make them into shape, and let them rise again until light. Bake about fifteen minutes in a quick oven. For buns add cinnamon. Sift the flour before measuring, and measure lightly.

Hints to Housekeepers.

The familiar mixture of lime-water and linseed oil, which is in the emergency medicine chest of most families, for use of burns from flame or heat, is quite as efficacious when applied to sunburn. The proportions to be followed are a half-ounce of the oil to a half-pint of lime water.

Boxes for ribbons, handkerchiefs, veils and gloves are more unwieldly in packing than are flat cases that tie together. Two pieces of cardboard of a convenient length should be cut and covered neatly on both sides with ribbon or any pretty silk. Then hinges of ribbon should be attached to one side and ribbon fasteners tied at the other side.

Currant fritters may be served

seasonably now as a sweet entree or dessert at dinner or for a luncheon or supper course. To the yolks of three eggs add a saltspoonful of salt and half a pint of milk. Mix well and stir in four tablespoonfuls of flour, the whites of the eggs and a teacupful of stemmed currants. Fry in boiling fat, drain on blotting paper, and serve piled on a folded napkin, and sprinkle with powdered sugar and cinnamon.

The bathroom chair should be low, softly cushioned, and finished in white enamel. The cabinet for the various toilet articles, liquids and salves that are liked should be white, and may conveniently have a door of mirror glass to serve the double purpose of cabinet and looking-glass. It is good news to the average housekeeper that arrangements to heat the bath water during the summer, while the coal range is out of commission, have been both improved and cheapened. It is possible now to equip a bathroom with this quick water-heating service for a low price, and yet in a way that insures a satisfactory working.

For pork salad one requires left-over lean meat from a tender young pig. The meat can scarcely be distinguished from veal or the white meat of chicken. If the pork has been slightly corned, the flavor will be all the finer. Reject every morsel of browned meat, fat or gristle and cut into tiny pieces. Mix with an equal quantity of chopped celery and serve with mayonnaise dressing exactly as if you were making chicken salad. You can impart a pleasant and unique flavor to the salad by using equal quantities of celery and crisp acid apples. Slices of beets cut into diamonds or hearts make a pretty garnish for this salad. Before you add a mayonnaise, marinate with a French dressing for several hours, setting it in the refrigerator until it is required for serving.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Sept. 3, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday.....	70 3/4 @ 71 1/4	66 3/4 @ 67 1/4
Thursday.....	69 3/4 @ 70 3/4	66 3/4 @ 67 1/4
Friday.....	69 3/4 @ 70 3/4	66 3/4 @ 67 1/4
Saturday.....	71 1/4 @ 70 3/4	67 3/4 @ 67 1/4
Monday.....	71 1/4 @ 70 3/4	67 3/4 @ 67 1/4
Tuesday.....	71 1/4 @ 70 3/4	67 3/4 @ 67 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday.....	32 3/4 @ 33 1/4	29 3/4 @ 30 1/4
Thursday.....	32 3/4 @ 33 1/4	30 @ 30 3/4
Friday.....	32 3/4 @ 33 1/4	30 3/4 @ 30 3/4
Saturday.....	34 3/4 @ 31	31 @ 30 3/4
Monday.....	33 3/4 @ 34 1/4	30 3/4 @ 31 1/4
Tuesday.....	33 3/4 @ 34 1/4	30 3/4 @ 31 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —
Friday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —
Saturday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —
Monday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —
Tuesday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —
Wednesday.....	1 13 3/4 @ 1 13 3/4	1 15 1/4 @ —

* Holiday.

WHEAT.

The volume of business transacted lately in wheat in this center on foreign and local milling account has not been heavy, but is on the increase, and is likely to be of quite fair proportions in the near future. Ships are in good supply. The quantity of ocean tonnage available for grain carrying is nearly 20% in excess of the amount in sight a year ago, and what is still more encouraging, freight rates to Europe show a reduction of over 40%, or a saving of nearly \$4 per ton, as compared with corresponding date last year. There are ships now in harbor sufficient to carry 150,000 tons wheat, and the fleet now headed this way is good for 400,000 tons more. Ships are not now quotable on wheat charters at over 23s. 9d. per long ton, usual voyage to Europe. In August there were 12 wheat clearances from this port, as against 6 for July. Last year there were only 2 wheat cargoes cleared from here in August and 8 in July. For the past two months the exports of California wheat aggregate 750,000 centals, valued at \$875,000. In July and August of last year the exports footed up 448,000 centals, value \$444,000. Values during the current week have been maintained close to the figures last quoted. The market closed firm.

California Milling..... 1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside..... 1 12 1/4 @ 1 15
Oregon Valley..... — @ —
Washington Blue Stem..... — @ —
Washington Club..... — @ —
Off qualities wheat..... 1 07 1/4 @ 1 10

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	5s 11d @ 6s 0d	6s 4 1/4d @ 6s 5d
Freight rates.....	37 1/4 @ 38 3/4	23 @ 23 9d
Local market.....	96 1/4 @ 1 00	1 12 1/4 @ 1 15

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.13 1/2 @ 1.13 3/4.
May, 1903, delivery, \$1.15 1/2 @ 1.15 3/4.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.13 1/2 @ 1.13 3/4; May, 1903, \$1.15 1/2 @ —.

FLOUR.

Shipments since last review have been heavy, especially to Asiatic territory, one steamer for the Orient taking 30,628 barrels. A large portion of the flour going outward represents deliveries on contracts. Business on local account was not particularly active and was at quotably unchanged values. Spot supplies, while not particularly heavy, are more than sufficient for current requirements.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

Market for this cereal has continued firm, with demand good, both for shipment and on local account. In addition to several clearances for Europe, and a shipment of 23,000 centals to New York, one

cargo of 41,284 centals, valued at \$52,372, went afloat the past week for Australia. This cargo was composed of Chevalier barley. Over 50,000 tons of barley has been shipped from this port in the last two months, being greater by about 10,000 tons than California wheat shipments for same period.

Feed, No. 1 to choice.....	96 1/2 @ 97 1/4
Feed, fair to good.....	85 @ 96 1/4
Brewing, No. 1 to choice new.....	1 00 @ 1 03 1/4
Chevalier, No. 1 to choice.....	1 20 @ 1 30
Chevalier, common to fair.....	1 00 @ 1 15

OATS.

The market has been decidedly unsettled, owing to some heavy holdings of old oats, reported aggregating fully 50,000 sacks, being crowded to sale to realize cash advanced on same by bankers. In new oats there is not much doing at the moment, although choice stock for seed is not lacking for attention, and for this description the market is, all things considered, fairly firm.

White Oats, fancy feed.....	1 20 @ 1 22 1/4
White, good to choice.....	1 10 @ 1 15
White, poor to fair.....	1 02 1/2 @ 1 07 1/4
Gray, common to choice.....	1 05 @ 1 12 1/4
Milling.....	1 15 @ 1 20
Surprise, good to choice.....	1 17 1/2 @ 1 22 1/4
Black Russian.....	90 @ 1 10
Red.....	55 @ 1 15

CORN.

Trade is necessarily of a light order, owing to the quite limited offerings, but at the same time there is more on market than buyers can be found for at full current figures, especially of Large Yellow, present holdings being mainly of this variety.

Large White, good to choice.....	1 45 @ 1 50
Large Yellow.....	1 35 @ 1 40
Small Yellow.....	1 37 1/4 @ 1 42 1/4

RYE.

Values are without noteworthy change, market being fairly steady at the quotations. A small shipment of this cereal was made to Australia the past week, and a part cargo of 750 tons was cleared for Belgium.

Good to choice.....	85 @ 90
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BUCKWHEAT.

Market is practically bare of offerings and values are in consequence not very clearly defined.

Good to choice.....	1 55 @ 1 70
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BEANS.

Stocks of old beans are not heavy of any description, but as most holders desire to effect a clean-up, preparatory to laying in supplies of new, concessions to buyers are being granted in some instances, rather than miss sales. More especially is this the case as regards Lady Washingtons, holdings of old being largely of this variety. Present indications are that there will be a fairly active demand for new crop beans as soon as they put in an appearance in wholesale quantity, and in most kinds no marked declines in prices are looked for. Black-eyes are, however, tending downward.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 50 @ 2 60
Lady Washington.....	2 30 @ 2 40
Pinks.....	2 10 @ 2 15
Bayos, good to choice.....	2 95 @ 3 05
Reds.....	2 25 @ 2 50
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	8 75 @ 9 00
Black-eye Beans.....	4 40 @ 4 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Market for Green Dried continues slow and devoid of firmness, with liberal quantities of last crop still in stock. Some choice Humboldt are offering within range of \$1.35 @ 1.45 and fail to find any noteworthy custom at these figures. Niles are practically out of stock, and offerings of new crop of this variety are likely to meet with prompt custom at good prices.

Green Peas, California.....	1 30 @ 1 50
Niles Peas.....	— @ —

WOOL.

There is a firm tone to the market, but there is not much doing. Spot stocks are light, and immediate offerings from first hands include very little desirable wool. Fall clip is coming forward very slowly, being held in many cases for higher figures than are now obtainable from either local or Eastern buyers. Moderate quantities of wool are going East, both scoured and in the grease, representing purchases made in the Spring season.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 11
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

New hops are now in moderate supply and are expected to be soon offering in wholesale quantity. The crop on this coast will be larger than last season and of better average quality. There are no evidences of much doing at present, buyers and sellers being considerably apart in their views of values. Quotations are 20 @ 24c, as to quality, but these prices are largely nominal, in the absence of any noteworthy trading. Following is a New York review: "In a general way the reports as to the condition of the growing crop have not changed materially. In New York State the weather has not been favorable, and there is an attack of lice; whether vermin will cause damage can not be foretold now, but there is time enough if they get into the burl. Some of the operators here have been occupying idle hours in figuring out the probable home yield, consumptive needs in this country and the apparent surplus. The most reliable of these estimates runs about as follows: Pacific Coast crop, 180,000 bales; New York State, 40,000 bales; olds and extracts, say, 7,000 bales; probable imports, 30,000 bales; stocks in brewers' hands on Sept. 1, 1902, 50,000 bales—which makes a total of 308,000 bales. Requirements on a supposed consumption of 42,000,000 bbls., using three-quarter-pound hops to the barrel, 170,000 bales, leaving a surplus of 137,000 bales for export and for fall and winter use in 1903. Advices from Germany report a 10-mark decline under good crop prospects. The English crop looks badly, the weather continuing very unfavorable. Most of the late cables indicate yield of not much over 350,000 cwt. Our local market is very narrow because of the smallness of the stocks. Those who have hops ask extreme prices for them; but there is an exceedingly limited demand, as most of the brewers have some supplies on hand, the cool summer having lessened consumptive requirements."

HAY AND STRAW.

Arrivals of hay are of still quite liberal proportions and above the average for this time of the year. There is not much selling pressure, however, stocks being mostly in second hands, and values are being tolerably well maintained at the previously quoted ranges. Decreased receipts and improved tone are confidently predicted for the near future.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	6 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 3/4 bale.....	37 1/2 @ 45

MILLSTUFFS.

There have been no special accumulations of mill offal of any description since last review, and values have in the main ruled steady. A shipment of 224 tons Bran, manifested at \$20 per ton, went forward per last steamer for Australia. Market for Rolled Barley remained firm. Milled Corn was slow of sale and market was rather weak at the quotations.

Bran, 3/4 ton.....	19 00 @ 20 00
Middlings.....	22 50 @ 24 50
Shorts, Oregon.....	20 00 @ 22 00
Barley, Rolled.....	20 50 @ 21 50
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Business in the several kinds of seeds quoted herewith is so light that it is difficult to name values. Aside from moderate quantities of Flaxseed, which are coming forward mostly under contract, receipts are insignificant. Very little Mustard seed offering, either spot or to arrive. Stocks of Bird Seed admit of only light jobbing operations.

Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 25
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2
Hemp.....	8 1/4 @ 8 1/2

BAGS AND BAGGING.

As is to be expected at this time of year, the bag market is very quiet. Were it not for a moderate movement in Fruit Sacks, trade would be decidedly dull. The Grain Bag market is weak, holders being willing to make concessions rather than carry stocks into the coming season. California farmers now have all their grain sacked. Small requisitions from Oregon and Washington may be made during the next sixty or ninety days.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	5 1/2 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 6
San Quentin Bags, 3/4 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 8 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8

Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Previously quoted prices and conditions remain current in this market. Prevailing values on Dry Hides and on Tallow are being well maintained. Demand for Wet Salted Hides is not very brisk, but prices for same are fairly steady.

HIDES, PELTS AND TALLOW.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	10 1/4 @ —	9 @ —
Medium Steers, 48 to 56 lbs.....	9 1/4 @ —	8 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	— @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ —	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 50 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 00 @ —
Salted Horse Hides, small.....	1 50 @ —	1 25 @ —
Dry Horse Hides, large.....	1 75 @ —	1 50 @ —
Dry Horse Hides, medium.....	1 50 @ —	1 25 @ —
Dry Horse Hides, small.....	1 25 @ —	1 00 @ —
Dry Colts' Hides.....	50 @ —	40 @ —
Pelts, long wool, 3/4 skin.....	80 @ —	75 @ —
Pelts, medium, 3/4 skin.....	50 @ —	40 @ —
Pelts, short wool, 3/4 skin.....	30 @ —	20 @ —
Pelts, shearling, 3/4 skin.....	15 @ —	10 @ —
Deer Skins, best summer.....	35 @ —	30 @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	6 @ —
Tallow, No. 2.....	4 1/4 @ —	5 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

There are no heavy offerings of either Comb or Extracted, and market is against buyers, the disposition of holders being to ask higher figures than have been yet current this season or than are now obtainable in a regular way. Particularly is the market firm for water white and light amber honey, these grades being in very limited stock.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESEWAX.

Not much coming forward and the quantity now in store here is of decidedly small volume. Market is firm at the quotations.

Good to choice, light, 3/4 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Demand was fair for Beef, with no excessive offerings, and market was moderately firm at quotably unchanged values. Market for Mutton ruled steady, and nothing to warrant anticipating any radical changes in quotable rates in the near future. Lamb is meeting with good demand at full current rates. More Veal than is arriving could be readily placed at the prices ruling. Hogs brought much the same figures as last quoted, market presenting a rather firm tone.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3/4 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 135 to 250 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/2 @ 6 3/4
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	7 @ 8 1/4
Lamb, spring, 3/4 lb.....	9 @ 9 1/4

POULTRY.

Receipts were not heavy of either California or Eastern poultry, and the market in the main favored the selling interest. In the matter of quotable values there were no marked changes to record, but there were some extra fine fowls sold above quotations. Chickens received the most attention, and especially was there a good demand for large and fat hens.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, choice young.....	17 @ 18
Turkeys, alive, Hens, 3/4 lb.....	15 @ 16
Turkeys, alive, Gobblers, 3/4 lb.....	15 @ 16
Hens, California, 3/4 dozen.....	4 50 @ 5 00
Roosters, old.....	4 50 @ 5 50
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	4 00 @ 4 50
Broilers, large.....	3 50 @ 4 50
Broilers, small to medium.....	3 00 @ 3 50
Ducks, old, 3/4 dozen.....	2 50 @ 3 00

Ducks, young, 1/2 dozen.....	2 50	@ 4 50
Geese, 1/2 pair.....	1 25	@ 1 50
Goslings, 1/2 pair.....	1 50	@ 1 75
Pigeons, old, 1/2 dozen.....	1 25	@ 1 50
Pigeons, young.....	1 25	@ 1 50

BUTTER.

While there was not much display of strength in the butter market, high grade fresh creamery or dairy was not plentiful, and tendency on butter of this description was to slightly higher figures. Ordinary grades of fresh were not much called for, cold storage butter being taken instead. There is considerable Eastern butter offering, mainly lard or factory stock, for which 16 1/2 @ 17 c is asked.

Creamery, extras, 1/2 lb.....	27 1/2	@ 28
Creamery, firsts.....	25	@ 27
Dairy, select.....	25	@ 26
Dairy, firsts.....	23	@ 24
Dairy seconds.....	20	@ 22 1/2
Firkin, good to choice.....	20	@ 22 1/2
Mixed store.....	16	@ 18
Pickled Roll.....	20	@ 23

CHEESE.

Demand is good for mild-flavored new of fine quality, and market for this description is firm at the quotations. Ordinary qualities are in sufficient supply for current needs. Eastern cheese is coming forward in moderate quantity and has been lately costing but little more than is being asked for domestic.

California, fancy flat, new.....	11 1/2	@ 12
California, good to choice.....	10 1/2	@ 11
California, fair to good.....	—	@ —
California, "Young Americas".....	11 1/2	@ 13

EGGS.

There are not many eggs now arriving from interior or coastwise points, and for the best stock the market is quite firm. Other than choice to select, however, are not receiving much attention, and will not command any great advance over the price of cold storage or Eastern eggs. Eastern are not in heavy supply, but there are liberal quantities of California cold storage on the market.

California, select, large, white and fresh.....	28	@ 30
California, select, irregular color & size.....	24	@ 27 1/2
California, good to choice store.....	20	@ 24

VEGETABLES.

Stocks of most kinds now in season were sufficiently liberal to cause the market in the main to incline in favor of buyers. Onions were steadily held, but the demand at full current figures was not brisk, either for shipment or on local account. Choice Corn was not plentiful, and the proportion of select qualities of the arrivals of Peas and Beans was light; some of these showing superior quality sold above quotations. Tomatoes were in liberal supply and moved slowly at rather low figures.

Beans, Lima, 1/2 lb.....	3	@ 4
Beans, String, 1/2 lb.....	1 1/2	@ 2 1/2
Beans, Wax, 1/2 lb.....	2	@ 3
Cabbage, choice garden, 1/2 100 lbs.....	50	@ 65
Corn, Green, Alameda, 1/2 crate.....	75	@ 1 25
Corn, Green, sack.....	50	@ 1 00
Cucumbers, 1/2 large box.....	30	@ 50
Egg Plant, 1/2 large box.....	35	@ 60
Garlic, 1/2 lb.....	1 1/2	@ 2
Onions, Yellow Danver, 1/2 cental.....	50	@ 60
Okra, Green, 1/2 box.....	40	@ 65
Peas, Sweet garden, 1/2 lb.....	2 1/2	@ 3 1/2
Peppers, Green Chile, 1/2 box.....	35	@ 60
Peppers, Bell, 1/2 box.....	35	@ 60
Summer Squash, Bay, 1/2 large box.....	30	@ 50
Tomatoes, River, 1/2 large box.....	25	@ 50

POTATOES.

Shipments of fair magnitude have been made the past week to Texas points at the reduced freight rates quoted in last issue. Trade on local account showed some improvement, and the market as a whole presented a much better tone than during greater part of last month, although in quotable values there were no radical changes.

Burbanks, Salinas, 1/2 cental.....	75	@ 1 10
River Burbanks, good to select, 1/2 cental.....	35	@ 65
Early Rose.....	30	@ 40
Garnet Chile.....	50	@ 60
Sweet Potatoes, 1/2 cental.....	2 00	@ 2 50

The Fruit Market.

FRESH FRUITS.

While the market for fresh fruit was far from being satisfactory throughout for the producing and selling interest, it presented a somewhat better tone than for several weeks preceding. Changes in quotable values were not as a rule very pronounced, but were mostly upward. Poor fruit was less in evidence than it had been, but there was still entirely too much of this sort for a healthy market. It is seldom the case that poor fruit can be placed to advantage, most buyers refusing to take hold of inferior stock at any figure. The poor fruit is not only a drug ordinarily on the market, but it interferes frequently with the advantageous sale of desirable stock. Apples are going at a wide range, with the market weak for common qualities and moderately firm for choice to select. It is the exception, however, where wholesale

transfers are possible at over \$1 per box, and only 4-tier stock of superior quality can command this figure from buyers of round lots. Pears sold at nearly as wide a range of prices as Apples. Choice to select Pears were in such very light receipt, however, that they were hardly quotable in wholesale fashion. Peach market was lower for Clings, these and Freestones going now at much the same prices, with former in heaviest supply. Plums were in reduced receipt, but offerings continued more than ample for the immediate demand. Grapes made a very fair display, both as to quantity and quality, prices continuing about as favorable to consumers as last quoted. Tendency on figs was to easier values, offerings showing increase. Melons of all kinds were plentiful, but with warm weather most of the week, they were favored with a good demand, prices ruling tolerably steady. There were no heavy arrivals of berries of any sort, and desirable qualities brought in most instances comparatively good figures, this being especially the case with choice Raspberries and Longworth Strawberries of superior grade.

Apples, fancy, 4-tier box.....	90	@ 1 15
Apples, good to choice, 1/2 50-lb. box.....	60	@ 75
Apples, common to fair, 1/2 50-lb. box.....	30	@ 50
Apricots, Royal, 1/2 crate.....	—	@ —
Cantaloupes, 1/2 crate.....	50	@ 1 00
Crabapples, 1/2 small box.....	25	@ 50
Blackberries, 1/2 chest.....	2 0	@ 4 00
Raspberries, 1/2 chest.....	6 00	@ 9 00
Figs, 1-layer box, 10 @ 75c; 2-layer.....	65	@ 1 25
Grapes, Fontainbleu, 1/2 crate.....	25	@ 50
Grapes, Muscat, 1/2 crate.....	40	@ 65
Grapes, Rose Peru, 1/2 crate.....	35	@ 60
Grapes, Seedless, 1/2 crate.....	70	@ 85
Grapes, Tokay, 1/2 crate.....	40	@ 75
Grapes, Zinfandel, 1/2 ton.....	23 00	@ —
Nectarines, Red, 1/2 box.....	40	@ 75
Nectarines, White, 1/2 box.....	25	@ 60
Nutmeg Melons, 1/2 box.....	25	@ 50
Peaches, 1/2 box.....	20	@ 50
Peaches, 1/2 basket.....	15	@ 25
Peaches, Cling, in bulk, 1/2 ton.....	10 00	@ 15 00
Peaches, Freestone, in bulk, 1/2 ton.....	10 00	@ 15 00
Pears, Bartlett, No. 1, 40-lb box.....	50	@ 75
Pears, common, 1/2 box.....	20	@ 40
Pears, No. 1 Bartlett, 1/2 ton.....	10 00	@ 15 00
Plums, choice large, 1/2 box or crate.....	30	@ 50
Plums, 1/2 ton.....	6 00	@ 10 00
Plums, small, 1/2 box.....	15	@ 30
Plums, large, 1/2 box.....	35	@ 50
Prunes, Tragedy, 1/2 crate.....	25	@ 50
Strawberries, Longworth, 1/2 chest.....	6 00	@ 9 00
Strawberries, Melinda, 1/2 chest.....	3 00	@ 5 00
Watermelons, 1/2 doz.....	75	@ 3 00
Whortlecherries, 1/2 lb.....	5	@ 7

DRIED FRUITS.

The same quiet air as previously noted is still being experienced in the market for cured and evaporated fruits. It is probable there will be more activity at an early day. Eastern dealers are holding back in many cases to see how much selling pressure is going to be exerted in the midst of the curing and drying period, so as to be able to get in on the ground floor in the matter of stocking up with this year's product. It will not be many weeks before the bulk of the crop going to dryers and packers will be ready for the market, and about same time there will be likely cooler and more favorable weather for dealers to stock up. Indications are that there will be no necessity for slaughtering high grade fruit of any variety, but common qualities will likely have to go as a rule at low figures. The better class of consumers, those who are willing to pay good prices, will not put up with poor goods, preferring to go without. Inferior stock can only be foisted on those who look mainly to price and buy only the cheapest food the market affords. It is quite probable that when the market becomes settled there will be a wider range than ordinarily between prices of choice and common stock. In quotable values there are few changes to record. Apples have been marked down half a cent, with market weak East and increased offerings here. White Figs are firm and Black steady. Inquiry is mainly for White, and offerings of this fruit this season are mostly No. 1. In the list of quotations Pears are added this week, with the remark that, while fancy are quoted, the quotation is wholly nominal, as there is no fancy fruit of the variety in sight at present, and such is apt to bring higher figures than are quotable. In new crop Prunes there is little doing. Santa Claras are quotable at 2 1/2 c for the 4 sizes, 1 c premium for 40-50s. Outside Prunes, 2 1/2 c, with 1 c. premium for large sizes.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/2	@ 6
Apricots, Moorpark.....	6 1/2	@ 8
Apricots, Royal, good to choice, 1/2 lb.....	5	@ 6
Apricots, Royal, fancy.....	6	@ 6 1/2
Nectarines, 1/2 lb.....	4	@ 4 1/2
Peaches, unpeeled, choice.....	4 1/2	@ 5
Peaches, peeled, in boxes.....	—	@ —
Pears, halves, fancy.....	6	@ 7
Pears, halves, choice.....	4 1/2	@ 5 1/2
Pears, halves, fair to good.....	3 1/2	@ 4 1/2
Plums, Black, pitted.....	4	@ 5
Plums, Red and Yellow.....	5	@ 6
Prunes, Silver, good to fancy.....	3 1/2	@ 6

COMMON SUN-DRIED.

Apples, sliced.....	4	@ —
Apples, quartered.....	3 1/2	@ —

Figs, White, in bulk.....	3 1/2	@ 4
Figs, 10-lb. box, 1-lb. cartons.....	30	@ 60
Figs, Black, in sacks, 1/2 lb.....	2 1/2	@ 3
Peaches, unpeeled.....	—	@ —
Pears, prime halves.....	—	@ —
Plums, unpitted, 1/2 lb.....	1 1/2	@ 2 1/2

RAISINS.

Prices for new crop raisins have not yet been established. Some sales have been made with an "if," that is, the seller will deliver the goods if he can do so profitably at the figures stipulated, otherwise not. Such sales afford no correct criterion of the market, but they have this effect, that they frequently keep buyers out of the field, who, with no contracts in hand, might be readily induced to pay better prices than stipulated in these provisional agreements.

CITRUS FRUITS.

Another carload of late Valencia Oranges was landed on the market this week. They were rather steadily held, but demand for them was not brisk. Lemons were offered freely and market for this fruit was weak, especially for the lower grades. Limes were in fair supply, a fresh invoice arriving from Mexico, and prices remained about as last quoted.

Oranges, Late Valencia, 1/2 box.....	2 50	@ 4 00
Seedlings, 1/2 box.....	1 50	@ 2 00
Lemons—California, select, 1/2 box.....	3 00	@ —
California, good to choice.....	1 75	@ 2 75
California, common to fair.....	1 00	@ 1 50
Limes—Mexican, 1/2 box.....	4 50	@ 5 00

NUTS.

Almonds are being steadily held, but are not meeting with much demand from the East at current rates, buyers on the Atlantic side finding fault with the price. Market for foreign almonds is reported easier, owing to slow trade. Prices for new crop Walnuts will not likely be fixed until next month. Growers are waiting to see how the foreign crop turns out. The prospect in France is said to be for a poor yield.

California Almonds, shelled.....	16	@ 20
California Almonds, paper shell, 1/2 lb.....	11	@ 12
California Almonds, soft shell.....	9	@ 10
California Almonds, hard shell.....	5	@ 6
Cal. White Walnuts, No. 1 soft shell.....	11	@ 12
Cal. White Walnuts, No. 2 soft shell.....	9	@ 10
Cal. White Walnuts, No. 1 hard shell.....	9	@ 10
Cal. White Walnuts, No. 2 hard shell.....	7	@ 8
Peanuts, California, fair to prime.....	4 1/2	@ 5 1/2
Peanuts, Eastern, hand-picked.....	6	@ 6 1/2

WINE.

In the way of transfers of wine from first hands there is very little doing at present, and wholesale values are in consequence not very well defined. Dry wines of last year's vintage are quotable nominally at 20 @ 25c. per gallon wholesale. Market for wine grapes of current season is showing firmness, with prospects of values being at a much wider range than ordinarily. White grapes will this season command a premium over red. The probable range on white grapes for dry wines will be \$25 @ 30 per ton, and on red grapes \$22 @ 26. Grapes for sweet wines are quoted all the way from \$12 to \$20 per ton, the lower figure for second crop Muscats and the top price for some choice stock for sherries.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	146,892	1,050,979
Wheat, centals.....	113,243	748,156
Barley, centals.....	195,513	1,236,304
Oats, centals.....	11,136	116,186
Corn, centals.....	6,555	9,493
Rye, centals.....	7,690	47,394
Beans, sacks.....	3,023	30,604
Potatoes, sacks.....	18,238	195,326
Onions, sacks.....	7,582	39,355
Hay, tons.....	4,767	39,738
Wool, bales.....	1,597	11,217
Hops, bales.....	95	126

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, 1/2 sacks.....	14,968	604,476
Wheat, centals.....	75,277	657,038
Barley, centals.....	130,774	825,862
Oats, centals.....	370	6,555
Corn, centals.....	515	5,317
Beans, sacks.....	302	2,823
Hay, bales.....	1,572	18,298
Wool, pounds.....	15,784	234,522
Hops, pounds.....	90	3,181
Honey, cases.....	—	85
Potatoes, pack's.....	1,616	11,704

California Dried Fruit at New York.

NEW YORK, Sept. 3.—Evaporated apples, common, —@—c; prime wire trav. —@—c; choice, —@—c; fancy, —@—c. New, 7 1/2 @ 9c. California Dried Fruits.—Market is not showing much activity, and is devoid of noteworthy firmness. Prunes, 3 1/2 @ 7 1/2 c. Apricots, boxed, 7 1/2 @ 10c; bags, 6 1/2 @ 10c. Peaches, unpeeled, 9 @ 10 1/2 c; peeled, 12 @ 16c.



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THE FIELD.

Progress of Alfalfa Growing in Kansas.

Alfalfa has been officially recognized in Kansas for an even dozen years, and during that time its popularity has steadily increased. Prior to 1890 it was not deemed of sufficient importance to be taken notice of in the statistics of the State Board of Agriculture. Now, and for the first time, it has a larger acreage than any other tame grass, its area being over 458,000 acres, according to the sworn returns of assessors now being compiled and tabulated by Secretary F. D. Coburn.

Timothy has been alfalfa's leading competitor in area until this year, when the returns proclaim its field is 138,657 acres, or 30%, smaller than that devoted to alfalfa. It is an interesting fact, also, that as early as the fourth year of alfalfa's statistical record (1894) its area exceeded by 24,000 acres that of the clovers for the same year, and each canvass has shown an increased difference in favor of the former. Indeed, statistics indicate that for Kansas alfalfa is being found superior, by those who have had experience with them, to timothy or clover. It is not only a perennial legume, of unusual powers of resistance to protracted dry weather, as against timothy and the biennial clovers of less fortitude, but annually yields from two to three times as much feed, equally as or more nutritious, and is a remarkable soil renovator besides. These facts in large measure account for the marvelous increase in appreciation and sowing of alfalfa, as disclosed by the figures. In 1891 of the tame grasses alfalfa ranked fifth in area, with 34,384 acres; in 1892, first with 458,493 acres, a gain of 424,109 acres, or 1233%, and an increase over 1901 of 139,351 acres, or 43.66%.

The United States Bean Crop.

Now that the bean harvest is at hand the following statistical information is of interest. The dry bean crop of the United States is quantitatively not of especial importance, either as compared generally to the principal domestic crops or specifically to the bean crop of many foreign countries. Its chief interest lies in the fact that it supplies an exceptionally nutritious vegetable food, furnishes a healthful variation to the staple diet of the people, and is now largely the product of three States of the Union.

The statistical history of the dry bean crop of the United States dates from 1880, when the Census Office issued a report upon production for the first time and indicated the yield of the entire country in 1879 to have been 3,075,050 bushels. During the succeeding ten years production increased but slowly, and the census of 1890 recorded an increase of only 2½%, the total crop of 1889 being given at 3,163,554 bushels. The crop of 1899, as published in the reports of the Twelfth Census, shows the first important increase in the census history of this product, the crop having amounted to 5,064,490 bushels, an increase of upwards of 60% over the crop

of the previous census year.

Dry beans, as is well known, are produced in every State of the Union. A feature of notable interest concerning this crop, however, is that it has attained important commercial proportions only in Michigan, New York and California. Over 75% of the total crop of the country was produced in these three States in 1899. In 1889 the same States produced 66% of the country's total, and in 1879 58%.

The apparent tendency toward the concentration into those three States of a greater and greater proportion of the country's total production is due chiefly to the remarkable increase of production in Michigan. Up to quite recent years New York steadily held first rank as a producer of beans, her output as late as 1889 having been almost equal to that of California and Michigan combined. But of late years bean culture, although it has more than held its own in New York, has increased rapidly in Michigan, and that State now, according to recent census reports, moves up from the third to the first rank, its production in 1899 having been 1,806,413 bushels, against only 434,014 bushels ten years previous, an increase of about 413%. Production in New York, on the other hand, showed an increase in 1899 of only about 22% for the same period, and amounted to only 1,360,445 bushels, against 1,111,510 bushels in 1889. California, whose production had increased from 378,971 bushels in 1879 to 713,480 bushels in 1889, thereby taking second place in bean production among all the States of the Union, declined to third rank in 1899, with a production of 658,515 bushels. The total production of beans in these three States in 1899 amounted to 3,825,373 bushels, a greater quantity by 661,819 bushels than the entire crop of the United States ten years before.

Outside of Michigan, New York and California, the remaining States produced in 1889 1,239,117 bushels, against 904,550 bushels in 1889, and 1,124,977 bushels in 1879. The most notable increase in production among these minor producing States is found in Florida, the crop having increased from 4890 bushels in 1879 to 6813 bushels in 1889, and to 176,304 bushels in 1899. Florida is now fourth in rank as a producer of dry beans; Wisconsin ranks fifth with a production in 1899 of 143,182 bushels; Maine, sixth with a crop of 137,290 bushels. No other State produces as much as 100,000 bushels.

Poultry Architecture.

To meet the constantly increasing demand for information about the construction of inexpensive poultry houses, G. B. Fiske has compiled this book, his chief aim having been to give designs of sufficient variety to suit conditions everywhere. These plans have been carefully selected from a much larger number, and only those are given which are in successful use and which are adapted to the needs of practical poultry keepers. Some of them are extremely low in cost and adapted to the utilization of second-hand building material. Whenever desirable the list of materials is given, showing what to get and its cost. The leading chapters treat on location and methods; low cost houses; buildings for colony system; homes for farm poultry; bank and sod structures and extras; incubator and brooder houses; special purpose buildings; coops, yards, fences, etc. The book is published by the Orange Judd Co., and can be furnished by the PACIFIC RURAL PRESS at 50 cents per copy.

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THE DAIRY.

Poison in the Dairy.

To THE EDITOR:—I believe there are two kinds of poison—poisons that kill and poisons that make you wish you were dead. Under the specious name of "preservatives," dealers quote various high-priced liquids and solids for "keeping" milk, cream or skim milk and for preventing "butter from getting off flavor or rancid."

I have been led to suppose that under such names as "freeze 'em," "preservative," etc., various preparations are used that consist largely of formalin, formaldehyde or other effective bug killers. I object to be made to introduce bug killers of any description into my "department of the interior." I do not want to drink salicylic acid in my wine nor eat boracic acid in my butter nor formalin in my hamburger steak.

The point of information I rise to is how to easily discover when the milk contains this "preservative," from which I want to be preserved, and the butter some "mixture" to keep it sweet and make me sour with dyspepsia. The hamburger steak of superabundant redness holds out its own danger signal. I also want to know how to get back at the fellow who administers these slow poisons in the essentials of life.

EDWARD BERWICK.

Pacific Grove, Aug. 25.

The Boards of Health seem to be the constituted authorities in this line. If you read the reports of their work it will destroy your appetite for anything.

Clean, Cold Milk.

H. E. Van Norman, dairyman for the Indiana Experiment Station, gives these interesting paragraphs:

A New York dairy, a New Jersey dairy and an Illinois dairy each sent milk to the World's Exposition at Paris in 1900, which was sweet fifteen to twenty-one days after it was drawn from the cow. How are these things possible? By extreme care in excluding dirt of every kind with its load of bacteria, then keeping the milk so cold that the bacteria which do get in, in spite of the care, cannot grow rapidly.

Milk sours because, in the process of growth and multiplication of the bacteria, the milk sugar is changed to lactic acid. When there is enough acid present to be apparent to the taste, the milk is said to be sour. Bacteria, like corn or any higher form of plants, require food, moisture and sufficient heat in order to grow and multiply. Milk has the necessary moisture, is a perfect food and is usually at the right temperature for rapid growth of bacteria. Since the keeping quality of milk bears a direct relation to the bacteria which gain access, it is important to prevent their getting into the milk. The udder and adjacent parts of the body which are much shaken during milking is one of the chief sources of infection, while the dust of the stable, the hands and clothes of the milker, together with the pails and cans used, are only slightly less important sources. Experiments show that milking in a stable where the circulation of air can carry the dust out, wiping the udder with a damp cloth and scalding utensils with live steam or boiling water, will not only reduce the bacterial content of the milk, but increases the keeping quality of the milk materially. A covered milk pail, with only a small opening to milk into, reduced the number of germs falling into the pail one-fourth as compared with a common pail, and the milk kept sweet twenty hours longer. Immediate cooling after milking is next in importance. Milk allowed to stand two hours without cooling contained twenty-three times as many germs as when milking was finished, while that which was cooled to 54° only had four times as many at the end of two hours. This emphasizes the importance of quick and thorough cooling.

Milk when first drawn has a peculiar flavor, or "cowy taste," more or less noticeable, which, if not driven off by



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aeration (exposure to the air), frequently gives the milk an unpleasant taste even before it becomes sour. Aeration may be accomplished by stirring or by pouring from one vessel to another. The can of milk may be set in a tub of water to cool. The cooling and aeration may be better and quicker done by running the milk over a combined cooler and aerator, having provision for running cold water through it. Finally, cleaner cows, cleaner milkers, scalded utensils, quick and thorough cooling aeration, less exposure to dust of street when delivering, will increase keeping quality of market milk. If properly done, one delivery a day will be all that is necessary.

Topographic Mapping of Southern California.

Important topographic work in sections of southern California is now being carried on by the U. S. Geological Survey, under the general supervision of Richard U. Goode, geographer. Two parties have been in the field since the season commenced. One of these, under W. T. Turner, with S. N. Stoner as principal assistant, is continuing the work which has been going on for several years in the Mount Pinos and Zaca lake and Santa Ynez forest reserves. The other party, under J. E. Rockhold, with E. R. Childs as principal assistant, is completing the work begun during the last field season in the vicinity of San Diego, thus finishing the mapping of practically all of the thickly settled portion of southern California.

Precise spirit leveling will be continued by a party under C. H. Semper. This party will first complete a gap in the line which was begun during the last field season at a tidal connection at Benicia and carried through the San Joaquin valley and across the Tehachapi mountains, so as to make a junction with spirit levels previously run in southern California. After this work is completed the party will go north to the vicinity of Sacramento and commence another precise line which will have its ultimate termination at Portland, Or. In connection with this line, iron bench-mark posts will be established along the line of the Southern Pacific Railroad at intervals of about 3 miles, on which will be stamped the elevation to the nearest foot above sea level.

In the fall, after it becomes too late to work in the northern States or the high Sierra, two large parties will commence work along the Colorado river, one outfitting at Yuma and the other at Needles. This work is undertaken with a view of determining the practicability of utilizing the waters of the Colorado river, which at present flow into the ocean, for the purpose of irrigating the vast tracts of desert lands in California and Arizona adjacent to the river.

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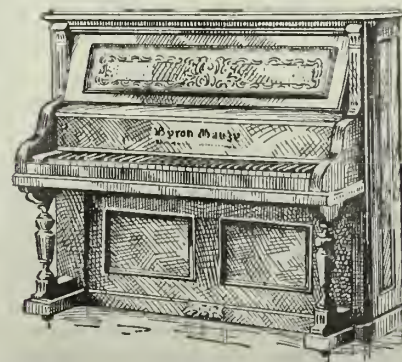
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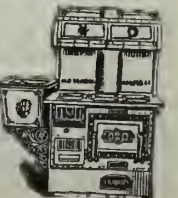
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The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

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ON THE ROAD.

How California Is Improving.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

FAUCET FEED IN IRRIGATION.—The citrus nursery of J. Hedberg at Lindsay is on a sidehill, and he controls the irrigation with a faucet feed for each row in a main pipe running across the field at the head of the rows. He thinks the system has some considerable advantages and is capable of general use. He irrigates by electric power pump from a well.

A HONEY GATHERING WAGON.—Many bee men have various colonies scattered over considerable territory. Just the easiest, quickest and most convenient way to gather the honey has been a question with them. J. F. Crowder of Selma, president of the California Bee Keepers' Association, has devised a wagon for the purpose, as he has some fourteen colonies to visit, all of which requires nearly 50 miles continuous travel. He has apparently taken an orchard truck as a basis, and on that built a covered structure with glass sides, in which he carries his honey extracting utensils, bedding and cooking outfit, and any other tools he may need. By this means he gets around his colonies without coming home more than once a week, another wagon hauling the extracted honey home as it accumulates. Mr. Crowder came to California from Texas in 1891, and worked for wages in the bee keeping business for two years. In 1893 he started into business for himself with twenty-five hives, and now he has about 1000 stands, sixty acres of land, a thoroughbred jack, and a traveling wagon for extracting honey, not to mention a very comfortable home and family, and is an officer of both the State and Selma organizations of bee keepers.

SANTA FE EATING HOUSE.—The Santa Fe eating house at Merced is a gem. Within it is cool, delightful to the eye, and satisfactory in service and in price. It is an "isle of the blest" to the weary traveler.

ANIMALS AND DISEASES.—Mr. G. S. Hewitt, with the San Joaquin Ice Co. creamery department as inspector of skimming stations, and who is himself a practical, owning farmer and dairyman, has the idea that much of black leg, tuberculosis and other cattle diseases come from cattle standing in and drinking stagnant field pools, from uncleansed troughs and the mud puddles which are often formed at the base of troughs. Where cattle roam at will and are not closed in by fences they can generally get to running water, and are not confined to stagnant pools. The husbandman sometimes forgets what a change fences make in the conditions of his cattle. Troughs should not only have the water changed in them frequently, but they should be emptied and scoured out and kept clean and bright. Cattle with colds and otherwise diseased should be segregated from the herd. It is quite as easy for cattle to catch disease by infection in drinking commonly out of one trough, especially if it contains only standing water, as it would be for humans, and as it is for humans by breathing the same air in common in confined places. Occasionally disease among calves is due to their participation in the mud—especially adobe—that sometimes forms below a drinking trough, and to their drinking out of such muddy pools when the trough for any reason is beyond their reach. From such sources as these, Mr. Hewitt thinks, arise many cases of various diseases in cattle, and his reputed success in keeping his cattle free from disease, with little or no medicine, gives force to his observations.

BENEFICIAL PUBLICATIONS.—How much judicious publicity, well supported by fact, affects the market may be seen this year in the course of the grain market. Early in June the PACIFIC RURAL PRESS made the bareness of the barley market, the compar-

ative shortness of this year's crop, and the judgment of capable men as to what the price generally should be to farmers, plain in a few short items. Justified by this showing, farmers who had not sold generally held back and got the raises which dealers, owing to conditions between themselves which naturally crop up in a bare market, were compelled to give in order to do business. Thus the farmers, or some of them, at least, have been able to get for grain something like the value justified by the relation between producer and consumer, had there been such relation direct. With the market circumstances different, this good result, of course, could not have been brought about in this way; but an equally plain newspaper statement of other circumstances would have enabled producers, had they a safe form of local organization, power to command shipping facilities on sound business terms, and direct connection with consuming markets, to secure the same results in other ways. But the organization of producers must be a safe one for them.

SOLANO COUNTY.—The following from a well-known business woman of Dixon shows how agricultural affairs are going in that part of the State:

The farmers of Solano county are wearing happy smiles, as it has been many years since they have had such bountiful crops, and have received as high a price for their grain, as this year. Most of the grain has been sold and the farmer has his money in his pocket. Besides the raising of cereals, the farmer is turning more to diversified farming.

The Dixon creamery is doing a thriving business. Many new pumping plants are being installed and alfalfa is to be raised in abundance. With plenty of green feed, the men who patronize the creamery expect to double their checks the coming year on pay day. Among the supporters of the industry is C. Joy, who located 2½ miles south of here last year. From twelve cows he received \$65 per month income. This alone supports his family, and he has the income of his 160-acre ranch clear.

The people are beginning to wake up and experiment.

J. H. Rice has just harvested forty acres of flax, which yielded very heavily. He has been offered \$2.50 per sack for his crop.

The yield of fruit has also been large, and, although the price of apricots was low, the orchardists have reaped a golden harvest from their dried fruit, so far, as the quantity was so large. All in all, this year has been one of the best for the farmer and the orchardist, in Solano county, for many a day, and it is no unusual thing to see the man who two years ago rode in his cart and drive one horse ride by in a fine surrey with his family, driving the "best span of horses to be found in the State," which is proof that Solano is progressing.

GRACE NORMAN.

FAIR AT PLEASANTON.—The fair of the Golden Gate Association, representing Alameda and to some extent San Francisco counties, held at Pleasanton last week for the first time, was not a great affair in size, but it was a farmers' affair so far as it went. The business houses and streets of the town were gaily decorated with bunting and flags, and there was amusement of a healthy nature for children, as well as men and women.

Considering that the people of the Pleasanton section of the county had but one month's notice and no previous experience in common, the show of stock was not bad. It was best in horses, not so good in cattle, with some fine sheep and hogs, and no poultry.

The betting on the racing was slim, but the racing was good.

The "pavilion" show in a hall in town showed, more than anything else, that the manager of that department—Frank Lewis—is an artist in anything he undertakes. Mr. Lewis's ordinary business is—well, that doesn't matter at present; but Mr. Lewis is a gentleman and drops into statistics and poetry, and one thing and another, occasionally, as is evidenced by the following intellectual photograph of himself by himself:

PLEASANTON 42 miles from San Francisco.
" 39 miles from Oakland.
" 14 miles from Haywards.
" 25 miles from San Jose.
" 6 miles from Livermore.
" 50 miles from Stockton.

I've traveled round a right smart bit,
And yet I never brag of it;
Seen California through and through,
And other States a time or two.
But of all the places, east or west,
Or north or south, as suits me best,
The place that beats them every one
Is this 'ere town of Pleasanton.

I know this State has got a score
Of mighty pretty towns, and more,
And some of them, it 'pears to me,
About as fine as towns can be.
But arter all is said and done,
'Taint had to pick the nicest one,
For somehow fancy seems to run
To this 'ere town of Pleasanton.

The folks in Pleasanton take their ease—
Are sort o' camped among the trees.
'Mong fruits and flowers, hops and wheat,
And horses, too, that can't be beat.
It's just the sort o' place, I 'low,
To take the wrinkles from one's brow.
To me the town is gold darn nice;
If I could dwell in Paradise,
Or stay right here, I'd wag my tongue
And say I'd stay in Pleasanton.

The Best Hay in the world;
The Fastest Horses in the world;
The Largest Hop Yard in the world;
Pleasanton owns her own Water System.

And that seems to be about the way most of the people around Pleasanton feel about it. But now to the pavilion: Its contents were artistic. The fine etchings and oil paintings were really worthy a place in the Hopkins Institute of Art annual show, while the carvings by a 16-year-old boy, and oil paintings by a man who never took lessons, were decidedly meritorious. Crazy quilts, drawn work, Mexican hats, costly saddles, Sicilian cart and harness (all loaned by Mrs. Phoebe Hearst, whose memory, even while living, is ever blessed in more places than Pleasanton), tin model of an air ship, buggies and stoves, a fine display of hops and displays of excellent peaches, apples, beets, olive oil from Pleasanton and Livermore, jellies, honey and dried apricots, and flowers by Mrs. Mendenhall and by F. A. Miller of San Francisco—quite a piece of enterprise on Mr. Miller's part—all helped to make up a show that was not as large as many, but was curious, instructive and well worth its cost to sightseers—a show of which all but half a dozen entries were contributed by citizens of Pleasanton, with an entry or two from Livermore.

And the crowd in attendance, reasonable in size, was characterized by thorough sobriety, order and an intelligent appreciation of things. Pleasanton people had no reason, apparently, to regret that they raised \$2000 in twenty-four hours, which they did, to secure the holding of the fair there, in a place made famous in days gone by by Sausalbury's race track—the scene of the training of many of the fastest horses in the world.

AT CORNING.—The Maywood Colonies Canning & Olive Pickling Co. is a California incorporation with a capital of \$50,000, represented in 50,000 shares at a par value of \$1 each. All of the stock is sold, about 30,000 shares having been sold to Eastern people and 20,000 shares to resident colonists. The pack these days averages 10,000 3-pound cans per day.

The drying plant is the property of the Maywood Colonies Fruit Association, representing an investment of approximately \$8000, with a capacity of drying 2000 50-pound boxes of fresh peaches per day.

In the colony complex there are 186 miles of avenues.

The cosmopolitan character of the land owners here is evidenced by the fact that land is owned by residents of the five continents.

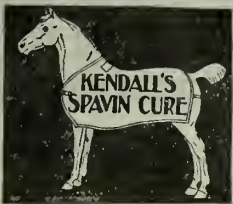
The section is much in need of help, say 50% more than it at present has. Active girls and women earn anywhere from \$1 to \$2.50 per day in the cannery and drying plant. Peach pickers are averaging \$3 per day. In one orchard one man picked 117 50-pound boxes of peaches on August 23, which at 5 cents per box earned him \$5.85. On Monday the same man—a young fellow about 21 years old—picked 130 50-pound boxes, which made him \$6.50 for that day's work. This is, of course, an exceptional case, but it shows what is possible under right conditions. Boys 14, 15 and 16 years old on some places pick with ease 40 boxes per day, making

SPAVINS, RINGBONES, SPLINTS, CURBS,

And All Forms of Lameness Yield to

Cured Spavin and Splint Without Leaving Any Mark.

Muscoda, Wis., Feb. 1, '02.
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us your book called "A
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one bottle of your Spavin
Cure last year and cured
one Spavin and one
Splint with it, without
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for KENDALL'S SPAVIN CURE, also "A
Treatise on the Horse," the book free, or address
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

them wages of \$2 per day. And Maywood colony is seemingly in its infancy.

It is locally claimed for Tehama county, and is borne out by the comprehensive report of General Chipman on olive culture, that the county has the largest acreage of olive trees in the State, most of which is in this Corning section, and olive culture seems likely to be one of the leading industries of the county. It is claimed that there are over 4000 acres of olives in Maywood colony alone. This is by long odds the center of the largest olive plantation in California. The olives prepared here are exceptionally fine in size, texture, flavor and color.

THE VETERINARIAN.

Glanders and Farcy.

By N. S. MAYO, Veterinarian of the Kansas Experiment Station.

Glanders and farcy are different forms of the same disease. When the disease attacks the mucous membrane of the nostrils it is called glanders. When the lymphatic glands of the body—especially of the legs—are attacked the disease is called farcy. Glanders is a contagious disease caused by a germ (bacillus mallei) that attacks horses, asses and mules, and can be transmitted to other animals, including man, by inoculation through wounds, sores or mucous membranes. The germs of glanders do not float through the air. The disease is commonly transmitted from a glandered horse by means of the discharge from the nostrils or sores. This discharge contains large numbers of germs of glanders and may be transmitted to another horse directly, or by means of watering troughs, feed boxes, mangers, hitching posts, equipment or utensils that may be infected with the discharge. It is possible that it may be carried by flies.

SYMPTOMS.—Glanders may occur in a mild chronic form, in an acute form, or attacking the lymphatic glands in the form of farcy. In the early stages it is often difficult to recognize, especially in the chronic form. One of the first symptoms noticed is a discharge from one or both nostrils. At first the discharge is thin, sticky and often resembles linseed oil. It dries about the nostrils, making it appear smaller than usual. As the disease progresses the discharge becomes more profuse, thicker, yellowish in color and sometimes streaked with blood. The mucous membrane lining the nose, especially on the partition between the nasal chambers, becomes ulcerated. The ulcers are raw, depressed in the center, with reddish edges. In some cases the ulcers may perforate the partition between the nostrils. In severe cases the mucous membrane of the nose becomes bluish or slate color, instead of a healthy pink. The lymphatic glands beneath the jaw usually enlarge, are firm to the touch and often seem grown fast to the bone. These glands rarely gather and break as they do in distemper. As the disease progresses the animal falls away in flesh, gets out of condition and the coat looks bad. In severe cases there is often excessive discharge of urine.

When the disease attacks the lymphatic glands of the body it is called farcy. It is most frequently seen in the region of the hind legs, but may occur anywhere on the body. It usually begins with firm lumps forming beneath the skin that may attain the size of a hickory nut, or larger, and often

occur in a string up and down the inside of the hind leg on the course of the large lymphatic vessels. These enlarged glands are commonly called farcy "buds." They often break and discharge an amber-colored fluid that dries upon the hair. These sores do not head readily and often show a tendency to spread.

TREATMENT.—Glanders and farcy are practically incurable and all diseased animals should be destroyed and burned or buried deeply. In doubtful cases the disease can be recognized by injecting mallein (a chemical product of the glanders germ). If the horse has the disease there will be a rise of temperature of 2° or more, with a well-defined swelling at the point of injection. All suspected animals should be carefully isolated from others and watered and fed from separate receptacles. Infected quarters should be thoroughly cleaned and disinfected by removing and burning all litter and similar material. Stalls, mangers and feed boxes, neck yokes, etc., should be cleaned and scrubbed with a 5% solution of carbolic acid in water, and when dried should be whitewashed or painted. Equipment that cannot be burned can be disinfected by boiling for one hour. Persons caring for glandered horses should be careful not to contract the disease.

Finer than slightest silk is the membrane lining the bowels. A little irritation of it produces griping and diarrhoea. Stop the trouble with Perry Davis' Painkiller. No honest druggist will deceive you with a substitute.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

- FOR THE WEEK ENDING AUG. 19, 1902.
707,191.—NEEDLE THREADER—O. A. Alcardi, S. F.
707,292.—TUBE EXPANDER—H. M. Barr, Wadsworth, Nev.
707,106.—POSTAL BOX AND SIGNAL—F. C. Bates, San Jose, Cal.
707,297.—CHUTE—F. W. Brink, Tacoma, Wash.
707,385.—ORE BREAKER—A. C. Calkins, Los Angeles, Cal.
707,307.—CAN OPENER—J. Chisholm, Fort Liscum, Alaska.
707,068.—RIBBON FASTENER—F. O. Garrison, Portland, Or.
707,321.—CLUTCH—H. B. Harding, Los Angeles, Cal.
707,250.—ROOF, ETC., CONSTRUCTION—B. McDougall, S. F.
707,340.—RUNNING GEAR—A. A. Medina, San Jose, Cal.
707,161.—SURVEYING INSTRUMENT—J. C. Sala, S. F.
707,359.—BICYCLE GEAR—P. J. Scharbach, Pe Ell, Wash.
707,287.—THRESHER—J. G. Walker, Moro, Or.

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Dinuba—H. Hurst, of the "Alta Advocate."
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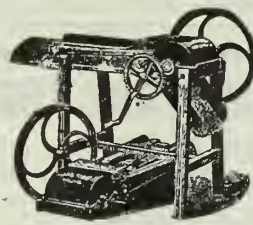
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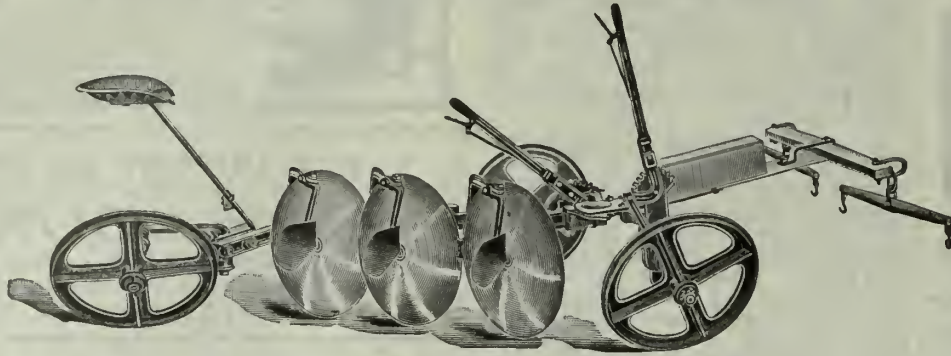
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THE BENICIA-HANCOCK DISC PLOW.

The Only Successful Disc Plow to Date!

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PLEASANTON, CAL., Dec. 30th, '01.

We sold the 3-Disc Plow we had here and put it into a field where the mustard stalks were so high that no other plow could be used. The mustard was fully 10 feet high and some of the stalks were from 1½ to 2 inches thick. We plowed everything under to a depth of 10 inches and left the land in fine condition to sow. The men we sold it to are very much pleased with the plow and after the second time around the field said, "We never expected to get around with this plow or any other without having to cut the mustard and clean the land."

Yours very truly,
THE HALL HARDWARE CO.

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The plow is a daisy, you bet! The more I use mine, the better I like it, for it will just beat any other kind of a plow all to pieces. It pulverizes the ground thoroughly 8 inches deep and makes the most complete seed bed I ever saw. It does not skip nor cut and cover either, but plows all the ground and turns everything under in the shape of weeds and trash. Mr. Churchill started his to-day and is delighted with it. He works 4 horses with his. I only work 3 so far. Have plowed over 15 acres with mine and can plow about 4 acres a day.

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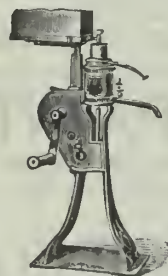
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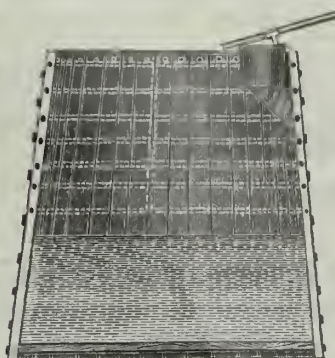
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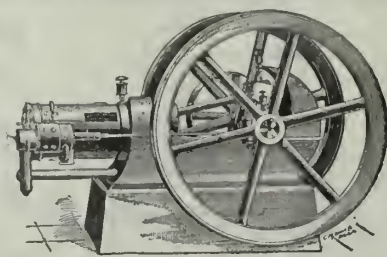
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 11.

SAN FRANCISCO, SATURDAY, SEPTEMBER 13, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Some Delta Lands in California.

The Laguna de Tache grant, in the extreme southwestern corner of Fresno county, on the Kings river, some features of which are shown on this page, is an excellent example of the delta lands of California. It is some 35 miles in extreme length, by from 5 to 7 miles in width in most of its extent, and contains some 68,000 acres, including 10,000 acres added by purchase in later years. In the main it is well covered with large oak trees, with willows along the water courses.

The soil is of the gray, heavy, sandy, loamy nature that characterizes all the delta lands. In this section it is from 3 to 15 feet thick. Under it is coarse river sand, which extends to an unknown depth. Nothing else has been found in the course of the well borings. The beauty of this sandy substratum, in cultivation with surface irrigation, is that the water has a tendency to carry what alkali there is in the top soil into the sandy soil, into which the water readily passes, instead of tending to bring the alkali to the surface, as in top soils underlain with hardpan or clay. There are some alkali spots in this grant, but not to any extent. The heavy growth of natural wood grasses and the trees that cover the land in its unbroken state are the best evidences of its fertility. The natural feed is always green.

A favorite method of irrigation here is to fill the ditches of the portion to be irrigated, then close them



Indian Corn on Laguna de Tache.

numerous ditches is 62½ cents per acre per year, and water is plentiful. It is not always necessary. Subirrigation is a feature of delta lands.

The settling of the grant has but just begun, so to speak, this being the third year of sale and settlement. For over fifty years it was held together as a stock range, a pasture and breeding place. It seldom changed ownership. Little breaking up of the original sod occurred. A few persons gained a foothold on it by lease for dairy and stock purposes, but only a few, and they did well. Three years ago the present managers, Nares & Saunders at Laton, began gradually to open it to settlement. Since that time they have gotten in a sufficient number of an excellent, practical resident class of people, so that within 4 miles of Laton—the company's headquarters—two large and handsome schoolhouses are now required to accommodate the school children, and a third will be built this fall.

After extensive travel and investigation, representatives of Quakers recently selected 2700 acres in the grant, and a large number of families of them are expected to arrive this fall to settle. A number of Dunkards will soon come in in the same way. There is a slow but steady income of settlers from other sources. It is a section characterized by song birds, and there is a spirit of peace and contentment among the people.

MINISTER W. P. Lord writes from Buenos Ayres,



A Vegetable Garden on the Laguna.



Settler's Home With Alfalfa in Foreground.

so as to hold in the water, and let it flow through and off the land by seepage.

Water is reached in sinking for wells usually at 3 to 6 feet. Wells are usually sunk to a depth of 40 feet.

The pictures accompanying give some idea of what may be raised on the land—which, in a general way, may be said to be almost everything—and a fair idea of the thousands of acres which are now settled.

Like all delta sections, this is especially good for alfalfa, stock and dairying. All kinds of fruit trees grow luxuriantly. Corn is one of the principal crops; the acreage is large and the growth and yield equally so. More corn is raised on the delta lands of Fresno, Kings and Tulare counties than in all the rest of California. Here, as in nearly all of California, the day of high prices for land is past, and homes may be had on very reasonable conditions.

The cost of irrigation from any of the



Oak Park and Sod Land on Laguna.

May 3, 1902, that in a recent report by Mr. E. L. Corthell (consulting engineer in the Ministry of Public Works of the Argentine Government), the writer says that it is impracticable to obtain quebracho Colorado, curupay, etc., in lengths suitable for deep foundations for harbor works; but that Oregon pine and pitch pine can be obtained in any desirable length and size, and preserved by the creosote or brunettizing process for twenty-five or fifty years above water and forever under water. The Argentine Government, adds Mr. Lord, intends to build a large port at Rosario, and much heavy timber will be used in its construction. The preference given in the report to Oregon pine may lead to its selection.

EVERY indication points to a large grape crop in Napa county this year, and the growers are jubilant over the prospects.

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E. J. WICKSON. Horticultural Editor

San Francisco, September 13, 1902.

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The Week.

As we go to press the admission of California to statehood has again been joyfully celebrated in the observance of the State holiday. The usual round of open-air festivities has been made. Words and other fluent things have flowed in good measure, spirits have been uplifted and the political being of California has been bathed in joy and gratulation. Each year brings new occasion to be thankful that this commonwealth was planted in this most desirable spot on earth and that it is given us to inhabit it. We believe that this is to be a growing sentiment and that appreciation of the delights and privileges of citizenship in California will increase as age and development come to the State. The pioneers were filled with most loyal patriotism for the land of their discovery; their children and successors will have even higher joy in their inheritance because of fuller understanding of it and because of its honorable place in the eye of the world and in the progress of humanity. It is well indeed to have one day in the year to think on these things and to plan more earnest efforts in their realization.

Another affair which is opening as we go to press is the State Fair at Sacramento. The earlier days of the week have been fully occupied with installation, and now the displays are in good shape. Next week everything will be put in condition, and those who have not already visited Sacramento this year should arrange for it. We spoke last week of the exceptional size of the cattle show. Later information is that never before in the history of the fair have so many horses been entered in the running and harness events, and the directors are finding difficulty in quartering them. Several stables of horses have arrived from the Montana circuit. It is expected there will be a number of record-breaking events during the racing season. Other departments are full and active. The dairy convention, of which the programme is given elsewhere in this issue, should attract much attention, and the leading transactions will appear in our columns. It will be well to go to the State Fair both for instruction and recreation.

Wheat has not scored any special advance in price the past week but market shows improved tone, being firm at the quotations with a good inquiry. The outward movement of grain has not been very heavy for the week—one straight cargo of wheat and two mixed cargoes wheat and barley, principally the latter, all bound for Europe. The engaged fleet in harbor is of liberal proportions and an increase in

wheat exports is looked for in the immediate future. Barley exports already make a good showing, footing up nearly 60,000 tons for the season to date. Barley continues in good request, with market strong, particularly for feed grades, which are following very close in the matter of price on the heels of brewing qualities. Oat market is showing a little better tone, but no quotable advances in prices. Corn is being more firmly held, with light stocks and some export inquiry. Rye is held at an advance of about 50 cents per ton. Beans show little change, other than a mark down in the price of Blackeyes. The Sacramento river bean harvest is now on. Millstuffs market is without noteworthy change. Hay market is showing some decrease in arrivals, prices remaining practically as before. Beef and mutton are steady. Medium-sized hogs are in light receipt and higher, while small are arriving too freely and are lower—a case of rushing the stock to market, anticipating a break, with likelihood of overdoing the crowding. Butter market might show healthier conditions. Fresh product is being held at rather stiff figures, but, instead of moving freely and cleaning up, is making an opening for Eastern and local cold storage stocks. Fancy fresh eggs are scarce and higher, and this is enabling holders of Eastern and cold storage eggs to unload to fair advantage. Cheese is offering a little more freely, but former prices remain in force. Potatoes are slower, but no lower. Onion market is rather firm. Fresh fruits are in ample supply and only for choice shipping stock does the market show firmness. Dried fruits are in fair request, and it is encouraging to note that the market in all probability has seen its worst for the current season. Honey market continues firm. Almonds are moving at steady prices. Hops remain inactive. Little doing in wool here; some purchases being made in interior at full current figures.

The opportunity in the beet sugar interest and the rate of its development mean much for California, and it is interesting to note the zeal of its promoters. According to a report just issued under the direction of James Wilson, Secretary of Agriculture, the total beet sugar produced in the United States in 1901 was 991,688,133 pounds. The consumption of sugar in Iowa during the year is given as 156,000,000 pounds. With this as a basis of calculation, and with the constant increase in beet sugar production which the Secretary promises will be maintained, it is easy to predict a production that will in a very few years equal the consumption in all the States west of the Mississippi. The consumption of sugar in the United States during 1902, calculated from the figures for 1901, is estimated in this report at 2,500,000 tons. The production of both cane and beet sugar is estimated at 500,000 tons, leaving 2,000,000 tons to be imported. It is the ambition of Secretary Wilson to encourage the development of the beet sugar industry to such an extent that enough factories will be established to supplant this foreign supply.

Prune problems are still perplexing, and a mass meeting of growers in San Jose on Saturday last did not go far toward their solution. The speakers could not explain why the prune market began at 2½ cents, dropped to 2½ cents, and now it is hard to find a buyer at 2 cents, in the face of the fact that the crop abroad is small and there is a ready demand for the California prune at figures much in excess of that paid here. It does not seem to us difficult to see through: the trade is disorganized; buyers do not know whether the behavior of the growers will make future prices less or more, and they naturally will not buy in advance of pressing orders. If there was an organization which growers had faith in and respected, and which could determine a minimum, the trade would be brisk enough. But we fear that, through recent experience, it will be some time before a decent organization can be secured. We are worse off just now than if organization had never been attempted, and must grow out of the present situation.

If Mr. Berwick will keep his eye on the city boards of health as agencies for bringing to light abominations in milk, as we advised him to do last week, he will reach both instruction and amusement. A city dairyman, who was recently fined for selling embalmed milk, has sued the man who sold him the em-

balming fluid, charging him with violating the ordinance which makes it illegal to doctor milk to give it keeping qualities. We do not see how the law can reach a man who did not really put the stuff in the milk, but the effect of the suit may be wide-reaching and may reach even to the Board of Health, which is charged by the papers with having given some protection to the vendor while they condemned the man who used the article. The public interest in the whole affair is that the practices all around may become so notorious that no one will either sell or use the preserving stuff and to compensate the public for this achievement there will be any quantity of sour milk.

The old benediction upon the man who multiplies blades of grass should descend in double measure upon a generous, plant-loving Californian, Mr. Lathrop, who is ransacking the known world to secure new plants to add to the beauty and prosperity of the United States. He is proceeding very systematically and liberally with this work. He takes with him in his travels around the world an able plant expert and enthusiast, Mr. D. G. Fairchild, and the two have been pursuing plants for the last five years or more and sending them for introduction in this country. The work is done under the name and auspices of the Department of Agriculture, but Mr. Lathrop pays the bills. These two public benefactors have just returned to this country from Japan and are enthusiastic in having bamboo forests planted in California as they are in Japan. Besides bamboos they have more than 150 species of plants, largely new to this country, for which they are now arranging introduction.

Those who realize how great an evil rebates have been in the overland shipment of California fruits will be gratified to know that the Interstate Commerce Commission is proceeding vigorously against such discrimination among shippers. The announcement is that the special attorney for the Interstate Commerce Commission has secured warrants for the arrest of the freight agents of four prominent Eastern railways for giving rebates on flour shipments. The act under which the bills were voted fixes penalties of a fine not exceeding \$50,000 or imprisonment in the penitentiary for a term not exceeding two years, or both. It is understood that the documents charged the officials with unlawful manipulation of rates on flour and feed to Eastern destinations. It is understood that the agent of the Interstate Commerce Commission secured a great deal more evidence than he expected, involving many prominent men in the Northwest, and that the four pending bills are but the beginning of the prosecution. Evidently the day of railroad righteousness is about to dawn.

Among the things which the farmer in any line most needs is sufficiently wide, varied and truthful marketing information to enable him to get the full market value of his crop. There is many a man who can raise a good crop of fruit or grain who finds himself short on the ability to market it well, on account of lack of knowledge of conditions elsewhere in this country and in other countries in his line, and understanding of methods of manipulation in the market; and to such the varied, full and intelligent market reports in various columns of the PACIFIC RURAL PRESS have proven of much value.

QUERIES AND REPLIES.

Sugar Cane in California.

TO THE EDITOR:—Has the Louisiana sugar cane or ribbon cane ever been grown in California? If so, with what success?—W. C. B., Pomona.

The true sugar cane is grown to a very limited extent in California by market gardeners in the hotter parts of the State, and the consumers are small boys and girls, who buy it for chewing purposes. There is absolutely no product entitled to commercial rank, nor is there any use of attempting any. The sugar beet is infinitely better suited to California and succeeds under conditions and in localities where the cane is a total failure. There has long been an idea that the low moist lands along the lower stretches of the Sacramento and San Joaquin rivers would be good for sugar cane, but experiments have clearly

shown the contrary. Cool nights in these districts are against its development. It did vastly better on irrigated lands near Fresno than on the tule lands near Stockton, and the right temperature was the differentiating factor. Sorghum has notable uses and adaptations for California valleys, but the true sugar cane is practically of no account.

Swine Feeding in the San Joaquin.

To THE EDITOR:—Will you kindly advise me in regard to the best feed in connection with alfalfa for hogs. I am not in the dairy business, but have enough alfalfa for 200 hogs and wish to devote my attention in that direction. I have sweet potatoes, peanuts, watermelons and corn, but these do seem to me the cheapest obtainable crop. I had thought some of having two acres of artichokes, and then cutting either wheat or barley when it is ripe, and stacking it up and letting the hogs do the thrashing. I also planned keeping a few cows in order to have milk for the little pigs. Will you kindly give your opinion?—INQUIRER, Stanislaus county.

Artichokes do not seem to be permanently satisfactory, though growers are very enthusiastic about them at first. Our present knowledge indicates that good land will produce more value in other crops. We could not think of growing sweet potatoes, watermelons or peanuts for pig feed, though wastes can be profitably disposed of in that way. Corn, if it does well, or Kafir corn, or some other of the grain sorghums, if you have too much heat or drouth for Indian corn, are good grains for hogs. Barley, handled as you propose, will give better returns than wheat. The alfalfa is all right alone for the growing hog; barley or corn to be added for the fattening. We should not keep cows expressly to make pig feed unless we were growing breeding stock which we could sell at high prices, but the cows for dairy products, with the wastes for the pigs, together with alfalfa and grains, is a good proposition.

The Lemon Cling.

To THE EDITOR:—We send you a sample of cling peaches about which there is a dispute as to variety. Will you tell us the proper name?—GROWERS, Selma.

The peach is the Lemon Cling. The specimens are rougher and coarser than usual but the distinctive marks of that variety are clear enough. The pointed extension of the apex, color, shape, texture, are all characteristic of the true Lemon Cling. There was a bogus Lemon Cling propagated to some extent long ago; it is larger than the true one, and coarser and less desirable, and it had not the pointed apex. This fact caused some confusion in our nomenclature and some disappointment among planters. During recent years few Lemon Clings have been planted, as the new California sub-varieties of the Orange Cling are more satisfactory. The true Lemon Cling requires good land and adequate moisture to reach acceptable size and quality: is in fact rather more demanding in its nature than other varieties.

Brown Rot on Apricots.

To THE EDITOR:—I send samples of diseased apricots. Please notify me through the columns of the PACIFIC RURAL PRESS what I can do for the trees. The disease appeared here three years ago. I have sprayed it thoroughly twice a year. It is worse this year than ever; the loss is one-half on old trees, which stand on rich ground, rather sloping, three miles from the bay. Other orchards are affected the same way, but they never spray.—S. B. WALLACE, Soquel.

The disease is brown rot, which was fully described and illustrated in the PACIFIC RURAL PRESS of February 16, 1901. The trouble is spreading and should be vigorously fought. Remove all the old fruit which has a tendency to shrivel and hang fast to the twigs all winter and produce masses of fungus spores to spread the disease next spring. Prune away carefully all dead twigs this winter, and spray thoroughly with lime, salt and sulphur wash. After the fruit is set, spray thoroughly with Bordeaux mixture. This treatment will check both the brown rot and the shot-hole fungus.

Prune Curing.

To THE EDITOR:—Will you kindly give information about prune curing?—READER, Belmont.

The details of prune curing are almost too long to undertake in this place. They have been frequently given in our horticultural columns. Briefly, however, it may be said that after the fruit is gathered and graded it is dipped in boiling lye; one pound of con-

centrated lye to about fifteen gallons of water. There are special appliances made by the Anderson-Barngrover Company of San Jose for dipping and keeping the lye hot during the process. They will send you a catalogue describing all their appliances on application. After the prunes are allowed to remain in the dip for a moment or two the skins assume a wrinkled appearance by the action of the lye. They are then generally rinsed in pure water and spread upon the trays, although some growers have adopted the practice of putting on the trays directly from the lye dip instead of rinsing. The lye dip should be changed frequently. After drying the prunes are allowed to go through a sweating process to equalize the moisture and finally, before packing, dipped in the following solution: Water, 80 gallons; glycerine, 6 quarts; glucose, 8 quarts. They are left in this solution from two to five minutes, according to size and condition of the prunes. The solution should be kept hot, even to boiling, if possible. The use of this and the high heat in the last dip seems to sterilize the fruit to a certain extent and prevent fermentation afterwards.

Treatment of Seed Wheat for Smut.

To THE EDITOR:—Being interested in the growing of wheat in Colusa county, I am in search of information regarding the use of a lime solution instead of bluestone in treating seed wheat to prevent smut, etc. Can you give me any information on this subject?—WHEAT GROWER, San Francisco.

The only methods of using lime for treating seed wheat to prevent smut known to us are the following:

First—The old method of liming the seed with air-slacked lime as a dry powder, thoroughly mixing the lime with the seed and allowing the grain to lie for a number of hours in contact with it. This is an old practice, which was wholly set aside by the more recent practice of bluestoning.

Second—The use of lime has now come in recently in connection with bluestone, but we have never heard of the lime solution being used alone. The combination is as follows: Soak the seed in bluestone solution for twelve hours, and then for five or ten minutes in a solution of lime made by slaking one pound of fresh quicklime in ten gallons of water. This, you will notice, is a scheme for treating seed wheat with the copper and lime preparation known as the Bordeaux mixture, which is so successful in the treatment of fungus diseases on fruits and fruit trees. It is manifestly an expensive and troublesome process, and, although the double soaking of the seed, first in the bluestone and then in the lime water, would be more effective as a fungicide than the use of bluestone alone, it is quite doubtful whether it would be feasible generally to add this extra expense to the cost of the crop.

The next method of treating seed for killing the spores of the smut consists in the use of hot water. This consists in soaking in water heated to a temperature of 133° F. Arrangements must be made to hold this temperature without much variation, because if the water cools off it is not effective, and if it should rise above 133° the germinating power of the wheat would be injured. The method is to dip the wheat, previously placed in sacks, in a large kettle containing hot water, leaving the seed in the water about ten minutes and moving it about so that the hot water will reach all parts of the grain. After the treatment the seed is spread out to dry, or else germination will take place and the seed will be difficult to handle. This method, also, is rather expensive in cost of manipulation as compared with bluestone, and it is doubtful if the saving of the outlay for bluestone is not more than covered by the cost of extra labor; still, there is very clear testimony to the value of the hot-water treatment if faithfully used.

Bulletin on Hop Growing.

To THE EDITOR:—Have you any of the State University bulletins for distribution regarding hop culture and hop curing? The bulletins are a very great help to the farmer.—SUBSCRIBER, Santa Rosa.

None of the University publications treat about hop growing, but if you will write to the Secretary of Agriculture, Washington, D. C., and ask for Farmers' Bulletin, No. 115, you will get a very satisfactory publication on "Hop Culture in California," written by Daniel Flint of Sacramento, a pioneer hop grower who is entitled to much credit for his careful and up-to-date discussion of this subject.

Gum Disease of the Orange.

To THE EDITOR:—Which is the best remedy for bleeding of the orange tree? I mean, healing the gum disease which oozes out above the ground.—READER, Anaheim.

It seems to be the general opinion of orange growers that the proper treatment for gum disease at the base of the tree consists in removing the diseased bark as cleanly as possible, and making an application of crude carbolic acid liquid with a brush. In irrigating, it is very important not to allow the water to stand around the tree in contact with the bark, for much of this form of gum disease can be traced to this cause.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 9, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The abnormally high temperature toward the close of the week, with clear weather, was beneficial to grapes, late deciduous fruits and hops, and very favorable for fruit drying. Heavy shipments of fruits are being made from Guinda, Sacramento and other places. Pears are of unusually good quality in Yolo county and the yield heavy. Preparations are being made for handling the prune crop, which is reported large. Almond harvesting continues. All varieties of figs in Yuba county are nearly ready for packing. Citrus fruits are in prime condition. Forest fires in the mountain districts are causing considerable damage. Grain thrashing and hay baling are progressing.

COAST AND BAY SECTIONS.

Somewhat warmer weather during the week has been favorable for fruit drying and beneficial to hops, grapes and late deciduous fruits. It is reported that canneries in some sections have refused to handle cling peaches, and that many tons of good fruit will rot in the orchards. The cool, foggy weather during a portion of July and August retarded the ripening of deciduous fruits in the northern counties, and some varieties of grapes are also late in maturing. The fruit crop is remarkably heavy, but much of it will go to waste. Citrus fruits are doing well. Hop picking is progressing rapidly in Sonoma and Lake counties, and the yield is reported above average. Beets and potatoes are being harvested at Salinas.

SAN JOAQUIN VALLEY.

Clear and much warmer weather has prevailed during the week. These conditions have been favorable for the ripening and drying of the fruit. Grain harvest is over, and the last of the wheat crop is being stored. Fruit cutting and drying are progressing rapidly. Nearly all of the early varieties of peaches are on the trays, and prunes are being picked in many localities. The prune crop will be large, but the size of the fruit is small in some localities. Grapes are sugaring well and picking and drying are progressing satisfactorily. The grape crop will be heavy and up to the average in sugar. A large crop of sweet potatoes is being harvested and shipped. Egyptian corn promises a large crop. Green feed is scarce, but dried feed is plentiful and live stock are doing well. Sheep shearing is in progress. Citrus fruits are looking well.

SOUTHERN CALIFORNIA.

Warm, sunny weather during most of the week was beneficial to grapes and all kinds of fruits. There was a light sprinkle of rain at Santa Paula on the 4th. Peaches are ripening rapidly and are very plentiful in some sections. Grapes will be ready for stacking in about a week in the vicinity of San Diego. Melons are plentiful and apples are in market. Walnuts continue in good condition, but will be late in maturing. Oranges are doing well. Beets and beans are being harvested. Grain harvest is completed and hay baling progressing.

EUREKA SUMMARY.—Crops are generally healthy and are making good advancement, but would be much benefited by rain. It is reported that apples in some sections are little below average; quality good.

LOS ANGELES SUMMARY.—A warmer week, but cloudy or foggy nights continue in coast sections, which is unfavorable for fruit drying. Peach season is on in full. Grapes are ripening.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, September 10, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.00	.23	.22	.65	62	50
Red Bluff.....	.00	.00	T	.36	103	66
Sacramento.....	.00	.00	T	.14	102	56
San Francisco.....	.00	.00	T	.14	70	54
Fresno.....	.00	.00	T	.16	104	62
Independence.....	.00	.00	.42	.15	96	54
San Luis Obispo.....	.00	T	.06	.08	86	58
Los Angeles.....	.00	.90	T	.09	72	64
San Diego.....	T	.11	.22	.59	110	68
Yuma.....	T					

THE STABLE.

Alfalfa as Horse Feed.

There exists in California a strange anomaly in the matter of horse feeding. Although in the alfalfa growing districts alfalfa hay is the main food of horses at ranch work, in other parts of the State, and especially in the cities and towns, alfalfa hay is condemned by horse feeders. Is it because of prejudice or for reason? It seems that in Utah the same state of affairs exists, for a recent bulletin of the Utah Experiment Station says:

There has been and is some prejudice existing against alfalfa forming a part or all of the ration of horses, not only in the East, where the value of this crop is not yet fully appreciated, but also in Utah. Much discussion has been running through the agricultural press during the past few years concerning the effect of alfalfa on horses. Some writers maintain that the plant has proved to be such a strong diuretic that it is not safe to feed to horses for a very long period. Other writers have maintained that the constant feeding of alfalfa is a most fruitful source of "heaves" in horses. In Utah few liverymen will use alfalfa, and on many farms it is fed to the cattle, sheep and hogs, but it is considered absolutely essential to provide timothy for the horses. Alfalfa, however, is the sole forage crop on most of the Utah farms; as a rule, it forms the sole ration of the young stock, of the milk cows, and of the horses, except during those seasons when severe labor is required of them.

To determine how far the disuse of alfalfa for horses is warranted the Utah station undertook a series of experiments for the purpose of determining if the prejudice existing in the minds of many horsemen against alfalfa has any foundation; and also to establish data as to the value of alfalfa when used as horse feed. The report of these investigations is now published in Bulletin 77 of the Utah Experiment Station, and we propose to take therefrom such statements as seem calculated to increase the general information on the subject in this State. Our older readers will have no trouble to appreciate the use of timothy hay as a standard of comparison with alfalfa, although timothy is known only in a few of the most northerly districts of this State. Younger readers, who do not know timothy, will not err widely if they take it as roughly equivalent to the grain hays most widely used for horses in this State.

FIRST EXPERIMENT.—Two two-horse teams, engaged in ordinary farm work, were used. One horse in each team was fed alfalfa, the other horse being fed timothy, each horse receiving the same amount of grain. Both hay and grain were accurately weighed, twenty-five pounds of hay and ten pounds of bran and shorts being given to each horse in twenty-four hours. After ninety-five days with this feeding the arrangement was changed and for fifty-six days the horses which began on alfalfa were given timothy and vice versa. After the whole period of about 150 days it was shown, by comparing the opening and closing weights of each animal, that while the horses fed on alfalfa made a gain during the experiment of seventy-five pounds, the timothy fed horses lost sixty pounds. While the weights given show in part the effect of alfalfa as compared with timothy when fed to horses, the whole effect cannot be shown. Horsemen interested in the horses belonging to the experiment station made inquiries of the teamsters as to the cause of the raw-boned condition of the timothy fed horses after a few weeks feeding on that crop. The alfalfa fed horses at the close of each feeding period presented a sleek, well fed condition; and the flesh, though not so firm to the touch as the timothy fed horses, presented a much better appearance to the casual observer. The teamsters did not notice any particular effect of the feed on the willingness of the horses to do work, though they were agreed that if they could have their choice they would much prefer to feed alfalfa.

SHALL GRAIN BE FED?—An experiment was made to determine whether alfalfa alone was a good food for a horse at hard work, since most of the farm horses of that section of Utah are fed in this way during the greater part of the year. In fact, many farmers feed alfalfa to milch cows, and the coarse stalks that are left are fed to the horses, and this refuse is eaten with apparent relish. Of course, where the horses are at work, the best alfalfa is fed, but unless very severe labor is performed it forms the sole ration for horses on many Utah farms. The results of the experiment showed that for ten days, at ordinary farm work, the weights of these horses weighing nearly 1400 pounds each, were maintained on slightly less than twenty pounds of alfalfa per day. The amount of hay fed was soon eaten and the horses evinced a keen desire for more, but the scales were taken as the guide as to the proper amount to feed, regardless of the appetite of the horse. The same team, six months later, was given an alfalfa ration

while at hard work, and maintained their weight, except in the case of one animal, which did not seem to be able to eat the forty pounds of alfalfa hay which the others ate. The horses did not, however, show the spirit at very severe labor which they manifested when partly grain fed. The conclusion indicates that it is doubtful if there is any economy in feeding a horse forty pounds of alfalfa hay per day. It is certain that better results can be secured by limiting the amount of hay to twenty pounds and substituting for the extra twenty pounds enough grain to make up the cost. This would secure at current prices, eight pounds of bran and shorts or 3.6 pounds of oats per day, and this amount with twenty pounds of alfalfa will make a better maintenance ration than forty pounds of alfalfa. Aside from the financial consideration it may be emphasized again that if digestive disorders are to be entirely avoided, concentrated foods must make up part of the diet of the horse.

ALFALFA FED ALONE.—But as to the wholesomeness of alfalfa as a sole feed for horses at ordinary farm work, the bulletin cites the experience of Utah alfalfa feeders in favor of it, and adds that alfalfa has formed the sole fodder ration of all the horses belonging to the experiment station from the beginning, twelve years ago, except when, for brief periods, they have been fed experimentally on other forage. The station has never lost a horse, either directly or indirectly, from alfalfa feeding. Neither has there ever been any inconveniences noted as a result of excessive urination. True, observations have been made that horses fed on alfalfa excreted more urine than on other feeds, but not enough more to cause any inconvenience. In fact, a careful experiment was made to determine this point, and the conclusion was that though thirst and urination were greater on alfalfa than on timothy, there is no evidence at hand, however, to prove that this greater consumption of water, and the consequent greater elimination by the kidneys is in any way detrimental to the health of horses. Indeed, might not the contrary results be expected? Is it not possible that the increased action of the kidneys and the greater amount of water passing through the body may result in clearing the body from injurious compounds?

OTHER CONCLUSIONS.—Horses watered before feeding grain retained their weight better than when watered after feeding grain. Watering both before and after feeding is advisable, and seemed to show "a small apparent advantage in favor of feeding after watering on digestion."

It appears that grinding grain for horses is not likely to prove an economical process, unless it be to relieve worn teeth. If the cost of grinding the grain is taken into consideration, ground grain would have to be from 15% to 20% more effective than whole grain to make the process profitable. As there was practically no difference in the weight of the horses, the conclusion is reached that it does not pay to grind grain for horse feeding.

Two trials were made to determine if the generally accepted belief that hay and grain mixed are more effective than when fed separately, is correct. The trials led to the conclusion that cutting and mixing hay and grain is not a profitable practice.

Alfalfa and clover hay cut into very fine pieces results in a greater gain than uncut alfalfa and clover. The total gain for both periods of lot of animals receiving cut alfalfa and clover was 174 pounds, and for the lot receiving whole hay fifty-seven pounds.

THE APIARY.

Italianizing Black Bees.

TO THE EDITOR:—Some weeks ago I read in your paper an article on "Italianizing" black bees, but in some cases it will not work, and as it winds up with having to buy an Italian queen the second season, why not buy one at first and do the business in one season instead of two. Briefly, the plan was to begin with one black hive, which after being transferred to an eight-frame hive, was to be divided, five frames being put in a new hive with the old black queen and carried several rods away, and the other three frames left in the old hive on the old stand, with another frame of comb in which Italian eggs had been laid, by a neighbor letting it be put into his Italian hive. Then a queen cell, raised from these eggs, was to be inserted in the new hive in ten days after the eggs were laid, and the old black queen killed. It was expected that the queens in both hives would be fertilized by black drones, and so had to be themselves replaced next season, so the only benefit obtained would be some drones from the Italian queens, which are considered to be pure Italians like their mother, even if she were mated with a black drone, as queens will raise drones without being fertilized—an instance of the parthenogenesis theory.

A DRAWBACK.—There is one serious drawback, though, in the method, which is, that on the tenth day the black queen instead of being found in the new hive where it was carried to, would probably be back doing business at the old stand, and her first stroke in that line would be to destroy the young

Italian queen cells. It has been written in many old bee books that old queens never leave their hives except with swarms, but this is a mistake. They fly out now and then for a change, as I have often seen them do; and I have known several cases where people have bought Italian queens and divided a black hive, leaving half the combs and a lot of bees on the old stand, with the Italian queen, carrying the old hive with the old queen in it to a new stand, several rods away, and in a few days the Italian queen has been found dead outside the hive and the old black queen in her place again, showing the old lady had taken a fly, probably feeling out of sorts with the smoking and moving she got, and when feeling better returned to the old spot she knew, and finding a new queen promptly knocked her out. A friend of mine at Fruitvale had exactly this experience last season. The plan advised allows ten days for her to do this in, and while I think it would take her less time, she might still be found in the new location in ten days, but the plan is risky.

THE BEST BEES.—I have kept nearly all kinds of bees, but prefer the Italian, and to make an Irish bull, the best Italians come from Switzerland. I have had a number of queens from there and expect some more this fall. The queens are dusky or leather colored, and breed workers and drones evenly marked; they are large and gentle and fine workers. The bees called "golden" or "improved" Italians are crossed with Cyprians or some bright colored bees, and are very pretty, but they don't breed evenly marked workers or drones, giving the owner the impression his bees are not pure bred; and they are not only poor workers, wanting to swarm all the time instead of gathering honey, but are also cross and hard to handle.

ITALIANIZING.—There are many ways to Italianize and several are easy and safe. If a man has only one hive, as spoken of in the article referred to, instead of getting Italian eggs that season and a queen next, let him get a queen at once and unite it to his black stock. Then he can let the stock swarm in the natural way (if he does not like to risk dividing, if not used to it), in which case he will begin the next season with one pure stock and two or three others which will have pure queens, though probably crossed with black drones, and in the spring will have only pure drones in all the hives, when it will be easy to raise queens for the two other stocks and get them purely mated. Say he has three stocks, one pure Italian, the others not. Just as soon as drones begin to fly kill one of the queens to be replaced. Shake and brush all the bees off the combs and put the combs in the pure Italian hive, replacing them with the combs from the Italian hive (after likewise clearing them of the bees), and if you open the hive again in nine days a number of queen cells will be found. [It is better to cut pieces of comb out of two or three frames where there are new laid eggs, when the queen cells will be found on several combs instead of perhaps on only one.] Then kill the second queen you want to replace and change one of her combs with one containing one or more queen cells, and then to make doubly sure change the other combs with combs from the pure Italian stock, which by that time would have all eggs under three days old laid by the purely mated queen first bought. The reason of this is, that if the queen cells should not be accepted—as sometimes happens—but destroyed, the bees would at once begin to raise a queen for themselves, and the only eggs young enough to use for that purpose, being from the purchased queen, the new queen would be all right, but not so if their own combs had been left them.

The beginner might say, why not kill both queens at once and divide the Italian combs between the two stocks, letting each raise a queen for itself, instead of bothering with queen cells? The reason why not is, at that time of the year the queens are probably laying about 1000 eggs a day, so it is better to keep one of them so laying while the other is raising her a queen cell, so that she would be provided with a queen in the cell, nearly ready to hatch, and have, while waiting for it, increased the population about 9000 young bees. It takes a lot of time and space to state why each move advised should be done, and yet if not explained the novice, not thinking some little thing might be important, might make some little changes, and those very changes might spoil the whole pudding.

ANOTHER WAY.—If instead of this plan he prefers to divide, then after the Italian queen has been in the hive not less than a week (here again there is no time to explain why a "week"), put a new bottom board beside the Italian stock and put the Italian stock on it. Then clean the old bottom board, if it needs it, and put a new hive on it. The middle of the day is the best time when the old bees are flying out. Find the Italian queen and put her with the comb she is on in the new hive on the old stand; then add three more combs, after shaking off a few of the bees, and fill the hive up with frames containing more or less foundation, as preferred. Then the old hive will be left with four combs of hatching brood and young in all stages from the egg up, having made sure there are very young eggs in the combs. Contract the inside space by putting in a division board, making, as you may say, a four-frame hive. Then carry this hive several rods away and keep the entrance closed

up with a wire screen for one day. If in an exposed position, better also shade it from the sun, or the bees would get too hot and crowd to the entrance, and some get suffocated. This new hive will soon raise a queen, but as black drones would be plentiful she would meet one and have to be replaced the following spring, as in the first plan, unless you delayed the division until your Italian queen produced drones; but if you wait for this you must also put a drone trap on the hive you introduced the Italian queen to, to catch what black drones may be hatched, and at time of introducing the Italian queen you must have cut out all drone comb containing young or eggs. As soon as the new queen begins laying you can remove the division board and put in four more frames, but better still build up from the other hive by giving two brood combs of hatching bees.

I could describe another way by which a quantity of black stocks could be changed in one season, by buying one queen, or stock of pure Italians; also, what a wonderful insect a queen is, and how wonderfully she is produced and changed for her new mode of life; the easy way a novice can study these wonderful insects by having a unicombed hive; how bees can be guided so as to improve to the owner's profit the things nature teaches them; and why when left to their own resources and unassisted nature's ways are the best for them, etc., but time and space forbid.

T. D. GAMAN.

215 Kearney St., S. F.

Notes on Bee Keeping.

By MR. GEORGE M. HAWLEY of El Cajon, at the Lakeside Farmers' Institute.

I have been accused by some of the older bee keepers of spreading the bee fever by my talk to the detriment of those already in the business. I will say that the truth will come out sooner or later, and will do no harm to the established scientific bee keepers.

THE BEE BUSINESS.—Many are enticed into the business by the wonderful results of a stray swarm in a good season, only to abandon it later when they find out the facts in the case. Reasoning from that as a basis, they consider that it is one of the most profitable industries in which they can engage. This might be true were all seasons alike; but bee keeping has its drawbacks as well as any other business. We find on an average that California has but two good honey years in five. It has been said that bees will work for you for nothing and board themselves and forage on the neighbors. I assure you that the man who makes a success at this business has got to be up to date and give it as careful attention, thought, and work, as to any other occupation. Bee keeping in the United States is getting into the hands of the specialist, and the old-style bee keeper is going out of business from necessity, not from choice. The same will be true in this locality.

WAY-BACK METHODS.—A disease known as foul brood has made its appearance in several parts of this country, and unless strict measures are enacted to prevent its spreading, it will destroy all neglected apiaries and render the business much more unprofitable.

For the man who will keep up to date, use the most improved appliances and restock his bees with the best strains of Italy, there is little or no better opening in the United States in this business than right here.

Last year the editor of *Gleanings in Bee Culture* took an extended trip through this and several other States. He said that he saw the most slovenly bee keeping here of any place in his travels. All styles of hives in the same apiary, all principles of bee space in the hives violated, and when the honey was removed it was set dripping and demoralized the whole apiary, making the bees cross and dangerous to handle. I endorse all he has said. If I had to handle bees in the way that the majority do here, I would go out of the business. Yet, when properly manipulated in properly constructed hives, there is no pleasanter occupation.

NEW METHODS.—The hardest work and that which required the most expert help was the old method of taking off honey. We now use a queen excluder, which confines the queen and brood to the lower chamber, the upper containing nothing but honey. By the use of the bee escape we get the bees out of the super without handling the frames or annoying the bees. Two persons can easily put on 100 pounds in an hour, and the next morning the supers can be as quickly taken off and stacked in the yard with a honey-house bee escape on top; what bees, if any, are remaining will soon leave.

During a good honey flow I aim to have two supers on each hive, so that bees will have plenty of room to store honey while we are extracting one set. I do not put any extracted supers back until all are finished; then two men go to the apiary and put them all on at once, one lifting the partly filled super already on, and the other placing the empty one under it. By this method we have no cross bees, as has been attested by cultivating, both in forenoon and afternoon, within thirty feet of the front of the hive

on the days we were extracting. I will say, however, that my bees are a strain of G. M. Doolittle's Italians, noted for their gentleness and honey-gathering qualities.

The present strain of bees is a mixture of native Cyprian, Holy Land, German and Italian, with the Cyprian, blood predominating. They are a cross, irritable and excitable bee, breeding excessively and swarming persistently. On dry seasons we always have early honey enough to overstimulate them for the kind of season. The result is that the new swarm and the weakened old colony do not get built up into good working shape before the dry season is on, and starvation is the result.

With the better strain of Italians, some of which are nearly non-swarming, we would have had entirely different results. They are more cautious in breeding, but would have been strong enough to have taken full advantage of the early honey flow; and by not having divided their forces, there would have been some surplus and plenty to have kept them over the dry year. They are a longer lived, longer flight and gentler bee, and in every way better adapted to the climatic condition of southern California.

The customary method of putting on empty supers without comb foundation, and allowing the queen free access to the upper stories, results in rearing an excessive amount of drones, who are consumers and not producers. It takes nearly a super full of honey to rear a super full of brood, and it would have been filled with honey had the brood not been there. There are scientific methods by which worker combs can be built for the supers without the use of comb foundation, but it would be too long to describe at this time. To the person who will not take the time to learn the scientific methods of queen rearing, I should advise only the natural methods of increase—swarming.

In conclusion, I would say that bee keepers ought to combine in selling their product and protecting their interests. By uniting with others last year, and selling honey in car lots, we were enabled to get $\frac{1}{4}$ of a cent a pound more than in smaller lots, a saving of over \$60 a car.

The road to success in this industry is by the adoption of improved methods all along the line.

THE IRRIGATOR.

Irrigation Work of the Department of Agriculture.

Our readers have been informed of the public irrigation work with special reference to the reclamation of arid lands which is to proceed under the Department of the Interior. They should also bear in mind the irrigation work of the Department of Agriculture, which proceeds along quite different lines, and is specially valuable, not only in its relation to great reclamation enterprises, but also directly related to irrigation progress by the States and irrigation practice by individual and corporate effort. Prof. Ellwood Mead, who is in charge of the work by the Department of Agriculture, recently gave an interviewer of a Montana journal a very interesting outline of this work, which should be brought to the attention of California readers:

THE USE OF WATER.—The work of the U. S. Department of Agriculture on irrigation has to do with the quantity of water used by farmers, the methods of use and the results obtained. Two comprehensive reports covering these phases of the work have been published, and a third is now in press and will be ready for distribution early in the coming fall. These reports contain the results of measurements made in each of the arid States, and in several of the States where irrigation is ordinarily considered unnecessary, including Missouri, Wisconsin and New Jersey. The work in these latter States, while of much less importance than in States where irrigation is necessary, has attracted considerable attention, because of the profits shown to come from the use of water during periods of drought. In some of the arid States the extension of the irrigated area depends very largely upon a better and more economical use of their water supply, since nearly the entire supply is used under present conditions. The work of the irrigation investigations is to point out the way to this better use.

It has been found that the success of irrigated agriculture depends very largely upon the laws and customs which have to do with the use of water. The Department of Agriculture has, therefore, taken up these subjects. An exhaustive report upon the legal and economic situation in California has been published, and a like study has been made in Utah, the results of which will soon be ready for distribution. The annual reports before referred to contain much along these lines also. In these reports D. W. Ross, State Engineer of Idaho, calls attention to the economy in the use of water, which is being brought about by a modification of water right contracts. Mr. Ross has given considerable attention to this reform; owing to his efforts and of others connected with the investigation, canal companies are substituting contracts under which the water is measured

to the farmer and he pays for what he uses, in place of the earlier contracts where he was charged a flat rate for the area irrigated, regardless of the quantity used. In this way the farmer is led to economize because he gets the benefit of his savings.

Changes of this kind have increased the need for more accurate methods of measuring water; hence the designing of cheap, efficient water registers has been given much attention by this branch of the department, and a number of new patterns have been invented and are now being furnished to irrigators by some of the leading instrument makers of the country at very reasonable prices.

Congress, at its last session, increased the appropriation for this work from \$50,000 to \$65,000, and provided for the extension of the work along three lines: "Investigations of the rights of riparian proprietors; the removal of seepage and surplus waters by drainage; and the use of different kinds of power for irrigation and other agricultural purposes. These subjects have only incidentally been included in the previous work of the office.

RIGHTS TO WATER.—Some of the arid States early abrogated the common law of riparian rights, while in others the law is as definitely established. In others it is not yet settled by the Legislature or the courts just what is the status of the rights to water. While opinions may differ as to what rights should attach to riparian rights, there can be no difference as to the fact that it should be definitely settled just what those rights are, and just what lands are riparian. If all riparian lands have a right to a reasonable use of water for irrigation, and that right can be enforced against those using water on non-riparian lands, the owners of such lands, whether they will or not, act as a menace to the use of water by others. Non-riparian lands may be much more valuable, but the owners will not reclaim them, knowing that at any time the whole investment may be rendered worthless by the use of a previously dormant riparian right. If it is well known that these rights exist, no individual injustice is done—the only harm may be in preventing development. But if it is uncertain whether riparian rights exist, large investments, made in good faith and with every reason for success, may be robbed of their value. The work of the irrigation investigations of the office of experiment stations is to gather such data as may furnish a rational basis for legislation and court decisions on questions relating to this important matter.

RECLAMATION BY DRAINAGE.—Along most streams the lands first reclaimed by irrigation have been the low lands. This is due to the ease with which water can be brought to such lands. As settlement has advanced, the higher lands farther back from the streams have been watered, with the result that much of the low land formerly cultivated has been made unfit for use by the drainage and seepage from higher lands. In other sections large areas of land having little slope have been ruined by the rise of the ground water, due to the filling of the subsoil by irrigation. In both cases the condition of the land has often been aggravated by the accumulation of alkali near the surface. This alkaline condition of the soil is uniformly attributed to poor drainage and excessive use of water in irrigation. The work of the irrigation investigations along this line will be to study the engineering and legal problems connected with the drainage of irrigated regions. As a beginning of work in this line, plans will be made for a drainage system adapted to the region in the vicinity of Fresno, where the ground water has in some places come so near the surface as to kill valuable vineyards, and where it threatens the life of horticultural plantations covering still larger areas. Work along this line is also being carried on in Colorado by C. C. Elliott, formerly editor of the *Drainage Journal*, and one of the foremost drainage engineers of this country. The work will be extended to other regions as time and funds permit.

PUMPED SUPPLY.—The series of dry years through which California has recently passed led to the development of the underground sources of water where it was formerly believed that the only available supply was the surface flow of streams. Many of the wells which at first flowed freely have since had to be pumped, and in many places a pumped supply has proved to be cheaper than the old supply from streams, besides being far more reliable. The experience of California in this respect has led to the establishment of pumping plants in other parts of the arid region, and to hope that a water supply may eventually be provided for vast areas of the Great Plains, which have been considered as beyond the reach of a water supply from any source. The recent developments of the rice industry in Louisiana and Texas, where the water from the rivers has been raised by pumps and spread over the high, level prairies, have also been added to the interest which is being taken in pumping water for the irrigation of lands which are beyond the reach of water taken from streams by gravity. In most localities the availability of a water supply by pumping is almost wholly a question of expense for power to run the pumps. The expense which it is profitable to incur for this purpose is limited to the value of the crops which can be produced by the water made available, and in many places the cost of power and the smallness of the crop which can be grown will prevent the

use of pumps. It is believed, however, that considerable areas can be reclaimed by pumping. The long distance transmission of electrical power which has only recently been in use, has made it possible to use the mountain streams to generate power for pumping water for use on lands which are beyond the reach of any stream and still to use the water of the stream to irrigate its own valley.

There are some places where pumping can be made to serve the double purpose of irrigation and drainage, removing the water from the lands which it is ruining and bringing it to lands which are valueless without it. In such places greater expense can be incurred than where only one end can be served.

POWER.—More briefly, the office will, as far as its resources permit, enter upon the study of different kinds of power for various agricultural purposes. There is as yet little published information on this subject and no systematic investigation of the many problems involved therein has been made. The collecting and publishing of data regarding the efficiency of different kinds of pumps, engines and fuels, and the opportunities for development and transmission of power for use in various kinds of agricultural operations will be a first step in this enterprise. Very little attention has yet been paid in this country to investigations along many of the lines of agricultural engineering. It is, therefore, very encouraging to have Congress show a disposition to broaden the work of the Department of Agriculture in this important discussion.

FRUIT MARKETING.

The Co-operative Raisin Packers' Association.

Written for the PACIFIC RURAL PRESS by request by
MR. A. L. McCRAE.

The "Co-operative Packers' Association," formed by local organizations in Fresno and Kings counties, was organized for selling purposes only on March 25, 1895. Since that time, having passed through various phases of the raisin business, they have changed their articles of incorporation, giving power to build packing houses and to do other business than the selling of raisins.

In 1899 they erected in Fresno a seeding plant with a capacity of five cars per day. Before it was destroyed by fire—on the night of August 21, 1899. In less than thirty days a much larger building of the same seeding capacity was running full blast. The present building is 120x140 feet, two stories high, with four stories over the seeding department. The plant is equipped with modern machinery and the many devices arranged for the handling of raisins places the Association in the position of being able to compete with any seeder in the business.

The yearly pack of the associated packing houses is from 400 to 500 ten-ton cars, according to prevailing conditions of the crop. Of the raisins controlled by the California Raisin Growers' Association, about one-sixth has been packed by the Co-operative Packers' Association.

The selling business of the Co-operative Packers' Association is conducted on strictly commercial lines and through brokers entirely throughout the world. It is one of the most successful co-operative organizations on this coast.

It is composed of eight grower-packing companies in different raisin districts. Each of the eight packing companies is formed either as a joint stock company or under the co-operative law, and raisin growers only are eligible to membership. Each packing company controls its own affairs through a regularly elected board of directors. They pool their pack for selling purposes through the organization known as the Co-operative Packers' Association, and each company owns equally in that organization.

The following houses compose the same: Easton Packing Co., Easton, Cal.; Hanford Raisin & Dried Fruit Packing Co., Hanford, Cal.; Kingsburg Co-operative Packing Association, Kingsburg, Cal.; Linnea Co-operative Packing Association, Parlier, Cal.; Madison Co-operative Packing Association, Madison district, Fresno county, Cal.; Oleander Packing Co., Oleander, Cal.; Producers' Raisin Packing Co., Fresno, Cal.; Union Co-operative Packing Association, Las Palmas, Cal.

Easton Packing Co. was organized as a stock corporation July 2, 1891. Its building, located at Easton, Fresno county, is 40x100 feet and has a stemmer capacity of 35 tons per day. The average yearly pack since organization has been 550 tons. Their membership numbers seventy-four. President, W. F. Rowell; secretary, W. A. Groves.

Hanford Raisin & Dried Fruit Packing Co. was organized August 22, 1892. They have a capacity of 30 tons per day and a building 80x100 feet located in Hanford, Kings county. Their membership numbers forty. Their average season's pack is 750 tons. President, J. H. Dopkins; secretary, L. C. Dunham.

Kingsburg Co-operative Packing Association was organized under the co-operative law September 10, 1896. They have a capacity of 30 tons per day, their building being 40x80 feet, situated in Kingsburg, Fresno county. Their average season's pack is 650 tons. Membership numbers seventy. President, A. Erickson; secretary, J. H. Bonesteel.

Linnea Co-operative Packing Association was incorporated under the co-operative law in May, 1899. They have a capacity of 20 tons per day and a building 40x80 feet, located at Parlier, Fresno county. Their average yearly pack is 350 tons. Their membership numbers forty-six. President, Alfred Nelson; secretary, A. T. Lindgren.

Madison Co-operative Packing Association, was organized under the co-operative law in September, 1895. Their stemmer capacity is 25 tons per day and their building 40x80 feet, located on Forsey Spur, in Madison district, Fresno county. Their average season's pack is 250 tons and their membership numbers seventeen. President, N. N. Norton; secretary, G. B. Sanford.

Oleander Packing Co. was organized as a stock corporation in June, 1893. Their stemmer capacity is 50 tons per day. They have a building 100x140 feet, situated at Oleander, Fresno county. The average pack per season is 1100 tons. Their membership numbers ninety. President, J. H. Gilson; secretary, Thomas Nook.

Producers' Raisin Packing Co. was organized July 25, 1891. Their daily stemmer capacity is 50 tons and average season's pack 700 tons. Their building is 100x140 feet, in Fresno, Cal. Membership is ninety-seven. President, A. H. Powers; secretary, E. M. Bishop.

Union Co-operative Packing Association was organized under the co-operative law June 18, 1895. The daily stemmer capacity is 40 tons and average yearly pack about 650 tons. Their building is 40x80 feet and located at Las Palmas, Fresno county. The membership numbers forty. President, J. D. Reyburn; secretary, C. Gaines.

The officers and directors of the Co-operative Packers' Association are Thomas Nook of Oleander president; C. Gaines of Union first vice-president; L. C. Dunham of Hanford second vice-president; W. F. Rowell, Easton, A. T. Lindgren, Linnea, J. H. Bonesteel, Kingsburg, N. N. Norton, Madison, directors; First National Bank of Fresno treasurer; A. L. McCrae, Fresno, secretary and manager.

Opening of the Spanish Market.

Special report through the Pacific Commercial Museum of
San Francisco for the PACIFIC RURAL PRESS.

The first transactions in raisins of the new crop took place on Saturday last, the 9th inst., the opening prices having been fixed at 62 pesetas per 100 kilos, which comes to about the following equivalents: Off stalks, 9 cents per kilo c. i. f. New York, United States gold; fine, 9½ cents; finest, 10½ cents; layers, 2 crowns, 10½ cents; layers, 3 crowns, 11½ cents; layers, 4 crowns, 12½ cents.

No material decline in these prices is to be expected until next month, and should any occur it will not be very important.

The quality promises to be a good average one, but the total amount is estimated at under 400,000 cwts., against 495,000 cwts. in 1901 and 587,200 cwts. in 1900.

JOSEPH RAMOS MORAND,
United States Consular Agent.

Denia, Spain, August 11, 1902.

The Almond Crop.

TO THE EDITOR:—The report of the almond crop furnished for publication in your last paper is not correct so far as Contra Costa county is concerned. There are more than 100 tons of almonds outside of the Association. I, myself, will have from 70 to 75 tons this year.
E. W. STEDING.
Knightsen.

THE POULTRY YARD.

House for Sitting Hens.

S. H. Reno, a California poultryman, gives the Orange Judd Farmer this account of a sitting-hen-discouraging apartment: The plan I outline is for a flock of about 100 hens. Build a low house 3 feet wide, 12 feet long, 3 feet high in front and 2 feet high in rear. Then divide into five spaces, 2 feet 5 inches each, made of wire mesh. Keep in each apartment a perch 8 inches high from floor and 30 inches long, with legs so inclined that there will be no danger of its getting overturned, also a box with compartments for ground bone and for wheat and corn. This should be hung conveniently on the wall, near the door, so that it will be kept free from dirt and filth. Place in one corner, fastened by a wire, a can of water.

In each apartment five hens may be kept with comfort. Number the doors 1, 2, 3, 4 and 5. Commence using by putting hens in space No. 1 one night, the next night in No. 2, etc. Four days are sufficient to break a hen from her desire to sit. Build facing the south and 15 inches from the ground. The material required is eight pieces 2x3x12 feet for frame and perches, one 3x4x10 feet for standards, one 1x2x10 feet for doors, one 1x3x16 feet for legs for perches, 140 1-foot inch boards for floor, roof, sides and ends, 40 square feet 1½-inch galvanized netting. Cut roof boards 4 feet long, floor boards 3 feet, boards for front 3 feet, for rear 2 feet and ends to suit. The plan is simple and can easily be followed. I would

recommend that a whitewash with dissolved bluestone, added in the proportion of one ounce bluestone to each gallon water, be used freely in all joints.

Poultry Appliances and Handicraft.

A neat booklet with this title by G. B. Fiske is intended to facilitate and ease the management of poultry on a large or small scale, and this in the most economical manner. By concise descriptions and clear illustrations, it presents many styles and kinds of the best contrivances in the line of nests, roosts, windows, doors, ventilators, home-made incubators and brooders, traps for vermin, feeding appliances, fountains and water system, food machines, heating apparatus, besides scores of miscellaneous labor-saving devices. No one who keeps or intends to keep poultry can peruse these pages without advantage. The book of 130 pages can be obtained through the PACIFIC RURAL PRESS for 50 cents, post-paid.

HORTICULTURE.

Peach and Nectarine.

A peach and nectarine growing on the same twig within 6 inches of each other is the freak of nature now in possession of Prof. N. B. Pierce, says the Santa Ana Blade. Charles Mason, a gardener in the employ of Fred Rafferty, found the curiosity on R. Moyer's place last Sunday while out on a sight-seeing tour. He turned it over to the care of Prof. Pierce, and that gentleman had it photographed and will have it done in water colors.

The tree from which it was taken is a peach tree of the Crawford variety, and the peach and nectarine are both of the average size, highly colored and fully developed. While the growing of a peach and nectarine on the same branch is an uncommon occurrence, it is not an altogether unheard of thing, for Darwin recites a number of similar instances and also recites instances of a tree producing fruit that was half nectarine and half peach. The first case of a peach tree producing a nectarine was recorded in 1741.

Darwin maintains that the peach tree originated from the almond, but Prof. Pierce thinks this is still an open question. The fact that peach sprouts—as the freaks are called by gardeners—are nearly always nectarines, might lead one to believe that inheritance is involved, and that possibly the nectarine is an ancestor of the peach. Were Darwin's theory correct, one might expect the peach to sprout to the almond rather than to the nectarine.

There are no nectarine trees growing in the vicinity of the peach tree from which this freak was taken, and it can not therefore be the immediate effect of pollen, and the growth is probably the result of bud variation.

Prof. Pierce will plant the seed of the peach and nectarine to see if the law of inheritance will prove out—that is, that each will produce the fruit that it now represents.

Cutting Apricots.

TO THE EDITOR:—What is the matter with Mr. Fraser's fruit pitters of Ventura? Your last week's PACIFIC RURAL PRESS gives a detailed account of Mr. Fraser's apricot orchard of thirty acres, the harvesting of the crop, etc., in which you say from forty to fifty pitters pitted on an average 400 boxes of apricots per day, making an average of a little over nine boxes per day for each pitter. We have a little schoolgirl here that can pit forty 50-pound boxes of average size peaches in one day, working eleven hours. Who can beat it?
W. J. O'HARA.
Oakley.

Topographic Survey of Northern and Central California.

Under the general direction of R. U. Goode topographic work is being prosecuted by the U. S. Geological Survey in various localities in California during the present field season. In the northern part of the State a special map is being made of the Keswick mineral region, including an area of about 30 square miles. A portion of this area is included in the Government map of the Redding quadrangle, which has been recently surveyed on the scale of about 2 miles to the inch. The special map will be on the scale of about 1 mile to 3 inches, the large scale being necessary to a proper study of the geologic questions involved in this important district. The party engaged in this work is in charge of A. B. Searle.

In the central portion of the State two parties are operating. One is in charge of R. B. Marshall, with G. R. Davis and L. D. Ryus as assistants. The party will complete the survey of the Kaiser Peak quadrangle, which includes the upper portion of the San Joaquin river.

The second party in central California is in charge of E. T. Perkins. Principal assistants are A. I. Oliver and W. V. Hardy. This party will survey the section in the vicinity of Kaweah and Three Rivers, an area of nearly 1000 square miles, including the headwaters of the principal tributaries of the Tulare river.

Agricultural Review.

ALAMEDA.

WINE GRAPES.—Livermore Herald: Negotiations have been completed by which a large percentage of the vineyards of the Livermore valley, aside from those connected with wineries, have passed into the control of the Wetmore-Bowen Co. for periods varying from three to five years. A uniform schedule of prices is included in the contracts, i. e., \$30 a ton for white grapes and \$20 a ton for the black varieties.

FRESNO.

CHAMPION PEACH CUTTER.—Reedley Exponent: Miss Pearl Lawrence, near Reedley, is believed to be the champion peach cutter in the State. This young lady, who is cutting for Clarence Hale, on the old King ranch, on August 19th cut eighty-eight forty-pound boxes heaped up so that there were really fifty pounds in each box. The peaches were of the Muir variety, and she received 5 cents per box, her day's work amounting to \$4.40.

RAISINS.—The picking of raisin grapes has become pretty general around Reedley this week, but it is claimed that a better quality of raisins could be procured by allowing the grapes to remain on the vines a few days longer. It is reported that the yield is much larger than had been expected. There will be more two-crowns than usual, owing to the heavy crop.

A BRANCH OF PRUNES.—Bert Smith, who resides a few miles south of Reedley, exhibited a branch of one of his prune trees, 30 inches in length, and containing 118 fine prunes, weighing six pounds. The limb is only 1½ inch in circumference at its largest point. The tree from which the limb was cut is growing on sub-irrigated land in which there is some alkali.

GLENN.

A NEW CATTLE DISEASE.—Willows Transcript: A new disease has broken out among cattle, and one which is proving very fatal. If Veterinarian Bressler has diagnosed the case aright, the disease is nothing short of diphtheria. He was called to the pastures of O. L. Raper Monday to treat a sick calf, but when he arrived the animal was dead. An examination revealed all the symptoms of diphtheria and the disease was so pronounced. Several more calves have contracted the disease since and there is small likelihood of their recovering.

QUIT GRAIN GROWING.—Willows Journal: Posters are out announcing an auction sale of the farming implements and stock of the O'Brien ranch on September 26. This sale will mark the passing of another of the largest grain farms of Glenn county. Mrs. O'Brien will convert her large farm into a stock range, and will raise stock on a large scale. The start will be made with 960 head of cattle. By the conversion of this ranch and the Garnett ranch into cattle ranges Glenn county's wheat yield will be materially lessened.

KINGS.

LARGE CLUSTER OF PEARS.—Hanford Journal: A curiosity in the pear line, especially for a year in which blight has destroyed nearly the entire crop of this county, is exhibited by L. G. Boggs, superintendent of Fred. Kimble's 80-acre prune ranch. There are quite a number of pear trees on the said place. On the end of one of the limbs has grown eight fully developed, large and juicy Bartlett pears, which weigh altogether four and one-half pounds, or over half a pound each.

ORANGE.

THE PRICE OF WALNUTS.—Fullerton Tribune: There continues to be a good deal of discussion as to the prices southern California walnut growers will get for their crops this year, and the consensus of opinion seems to be that it will be from 10 cents to 12 cents for the highest grades. The shortness of the Grenoble nuts, which are usually imported in sufficient quantities to be a factor in making the price for the California nuts, is named as one rea-

son for a high price. Another reason is that the crop on the soft-shell trees will be light. In some places this will be counterbalanced by the very heavy crop of hard shells, but in some of the newer walnut-growing sections there are but few of the latter planted. There also seems to be an increasing demand, and a prominent walnut rancher stated this week that nearly double the number of advance orders had been received this year. According to reports now coming in, the walnut crop will mature fully ten days earlier this year than ordinarily.

LOS ANGELES.

APPLE TREES EXTRAORDINARY.—Pasadena Star: H. T. Griffin, a prominent rancher of the Whittier section, has some apple trees on his ranch which are curiosities. They are well grown specimens of the Skinner pippin variety, the normal fruit being large, smooth and of a yellow-green color. The trees did not leaf out till June, and now have a crop of ripe apples, normal in color and of large size. In addition to this crop, they have second and third crops of much smaller apples, and are now blossoming for the fourth time since June. Mr. Griffin states that the trees have acted in this manner for several seasons, the latter fruit retaining the normal shape and bright red in color. One of the "first crop" apples a year or two ago weighed thirty ounces and was taken to the Los Angeles Chamber of Commerce, where it holds the record for weight.

CITRUS FRUIT ASSOCIATIONS.—The annual meeting of the stockholders of the Glendora Citrus Association was held last Saturday. The year has been the most successful in the history of the association. The stockholders voted to take up fumigating in a co-operative way, and to take steps looking to the establishment of a plant for the utilization of culls and waste fruit. As directors were elected W. R. Powell, Asa Hall, J. J. West, J. H. Hommel and W. J. Cox.

The Charter Oak Citrus Association, composed of orange growers heretofore affiliated with the Glendora Citrus Association, held its annual meeting Friday and elected as directors William Bowring, president; S. A. Stowell, vice-president; J. E. Martin, William Crook and Arthur Bowring. Bryce M. Given was elected secretary and manager.

At the annual meeting of the stockholders of the Fernando Fruit Growers' Association R. H. Maclay, G. M. Vaughan, R. K. Hill, F. A. Powell and B. F. Wolff were elected directors for the coming year. The following officers were elected: R. H. Maclay, president; B. F. Wolff, representative; C. C. Hopkins, secretary.

SAN BERNARDINO.

MONEY IN TOMATOES.—Redlands facts: Charles Haynes of Redlands has been growing tomatoes on a rather extensive scale, and much to his own profit. From 15 to 275 plants he has thus far this season sold 3500 pounds, and he estimates that he has fully 2000 pounds left. The product of the prolific vines has averaged 20 pounds to the plant, and so far he has gotten 23 cents for what he has sold from each tomato plant.

SAN JOAQUIN.

SHOT A CHICKEN THIEF.—Lodi Sentinel: The people of Acampo have of late been hothered considerably by losing poultry. Chickens by the dozen were missed and it was not until one night last week that the thief was caught. Mr. Ogden had hid himself in the barn near his chicken house and about midnight he heard a noise as if some one was approaching. He cocked his gun and awaited. Nearer and nearer came the footstep and as the thief was about to enter the chicken house Mr. Ogden fired. Immediately a yell of agony told that he had spilled blood and upon going to the door there lay the dead robber—a large-sized coyote.

A LARGE PUMPKIN.—Chandler Montgomery, of Lockford, seeded several acres and near the center of the patch there was a large space on which there was no pumpkins. In this vacant spot grew a monster vine which produced a pumpkin that has a diameter of 5½ feet. The weight is 156 pounds and six men failed to lift it because of the cumbersome shape no firm hold could be gotten on it. Mr. Montgomery will exhibit it at the Stockton Fair.

SANTA BARBARA.

QUAIL AND DEER DOING DAMAGE.—Lompoc Record: The complaint is general that the quail are working sad havoc with the beans. Little attention will be paid to the game laws when quail become a nuisance to the extent of destroying crops as they are doing this season. Even the deer are accused of destroying the mountain orchards.

THE MUSTARD CROP.—The mustard threshing crews have completed their work, and a very accurate estimate places the output at about 23,000 sacks. The

yield last year, being an average crop, was about 50,000 sacks. The price of this valuable product holds good, 3 cents a pound, but shows no indication of increase on account of the shortage in the crop. It is hinted that the supposed holding of a good part of last year's crop in the hands of the producers makes buyers chary of an advance in prices.

SANTA CLARA.

THE FIRST PRUNES.—San Jose Herald, Sept. 6: Half a dozen rival fruit packing firms are competing for the honor of having shipped the first carload of prunes for the season of 1902. From present indications it will be at least a week before the cars are in readiness. The prunes will doubtless be consigned to some Eastern market. Although a large quantity of fruit will be ready this month, no heavy movement is expected until October.

MARKETING CALIFORNIA PRUNES IN FRANCE.—At a mass meeting of prune growers held in San Jose last Saturday the question of how it comes that the prune market began at 2½ cents, dropped to 2½ cents, and now is slow at 2 cents, was thoroughly discussed, and this in the face of the fact that the crop abroad is small and there is a ready demand for the California prune at figures much in excess of that paid here. Paul Masson, the wine man and fruit grower, who has just returned from a trip to France, advised the growers to ship their prunes to France in sacks, unprocessed. He has sold his own crop at a better figure than can be obtained here.

SHASTA.

DEER AS PESTS.—A dispatch from Redding says that in some parts of Shasta county deer are doing great damage. In some orchards they browse upon the branches of young trees at night. J. B. Arnold's young almond orchard has been almost ruined by their depredations. Farmers are trying to get relief by stalking the deer at night, and several of the animals have been killed in that manner. Vineyards are invaded by deer, which seem to be partial to young and valuable vines. Orchardists welcome sportsmen to hunt on their lands.

SONOMA.

BIG POULTRY PLANT.—Petaluma Argus: L. L. Byce went to the Thoenes ranch at Two Rocks Saturday to put up a number of hot-water brooders, as 5500 chickens were hatched at the Thoenes ranch to-day. Mr. Thoenes is one of the largest poultry raisers in the world, having about 6000 laying hens on his ranch. He has brought as many as thirty-two cases of eggs to town in a single week. When asked what his expenses were for feed daily, he replied, "It is costing me just \$13 per day to feed my old fowls."

POOR GRAIN CROP.—The grain crop in the vicinity of Petaluma is said to be the poorest in years. The crop is backward, and the grain is of poor quality and very thin in places. Many farmers will use their grain crops for pasturage, while some will cut it for hay.

SUTTER.

BIG FIG PACK EXPECTED.—Sutter County Farmer: Fig packing will begin at the Rosenberg packing house here next Monday and an additional force of 200 hands will be required. The figs have begun to come in and as a rule are of good size and quality. If the weather holds fair so that the fruit will mature and dry well one of the largest packs will be made on record. Besides the crops in this vicinity, considerable fruit will be shipped in from other counties.

TEHAMA.

FINE LOT OF STEERS.—Red Bluff News: About four years ago Gerher & Conard commenced to cross their stock cattle with thoroughbred Hereford huffs, and they are now beginning to realize from the progressive move. On Saturday W. E. Conard of the firm and his son Leo drove to town twenty-five head of as fine and fat grass-fed two-year-olds as ever came to Red Bluff. The cattle were sold to an Oakland firm and brought \$40 per head. Mr. Conard says his neighbors sold their steers of the same age at from \$30 to \$33 per head. A butcher being asked why these cattle brought such a high price answered that it was because they were prime beef and Herefords.

SHEEP POISONED BY MILK WEED.—A good many sheep have died this year on the drive from the summer ranges from eating milk weed, or poison weed, as it is also called. In a lane about ¼ mile long, near Manton, a few days ago sixteen head of sheep were seen lying dead, their death supposed to have been caused by eating this weed.

YOLO.

SALE OF WINE GRAPES.—The Wyck-off brothers have sold their crop of wine

grapes from their Dunnigan vineyard to G. Migliavacca of Napa for, it is reported, \$18 a ton. They have seventy-two acres and the crop is a good one. A number of men left Woodland for the vineyard on Sunday, and a force of twenty men began picking Monday. Pickers are paid \$1.50 per day and board.

1. \$2300 buys 65 acres choice sandy land, on railroad, 6 miles from Merced. Cal. Depot on land. Don't wait for your hat if you want a bargain.
2. \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
3. 3-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced Cal.

Fine Income Proposition.

NAPA VALLEY FARM HOME.

Level tract of 400 acres; finest soil in Napa county; near Napa City; railroad runs through the place; fair improvements and all fenced; income last year \$265; price \$10 per acre; adjoining land of same value sells at \$50 to \$75 per acre; must be sold account of non-resident owners.

McAFEE BROTHERS,

108 Montgomery Street, San Francisco, Cal.

SEALED BIDS

will be received and opened September 20th, 1902, by the GUINDA PRUNE GROWERS' ASSOCIATION for

350 Tons (more or less) of Good Merchantable Prunes

grown and cured in Capay Valley, Yolo County, California. Bids to be made on basis of the four sizes, with premium of large sizes. O. B. GUINDA, CAL., purchaser to furnish sacks. Each bid must be accompanied by a certified check to the amount of \$1000.00, payable to the undersigned. The Association reserves the right to reject any or all bids. Correspondence solicited. Address

S. GLADNEY, Secretary,
GUINDA, CAL.

BIG MONEY

In Dairying in Fresno County

CALIFORNIA

4,000 acres alfalfa for lease on shares. Rental only one-third of the butter fat produced. Tenant retains two-thirds butter fat and all calves and all hogs. Alfalfa the king of dairy foods. Butter at half its cost in Eastern States. No housing and feeding stock. Pasturage every day in the year. Don't buy land. Buy cows and rent alfalfa. Far greater profit thus to dairymen. Skimming station of the San Joaquin Ice and Creamery Co. on the property.

Feed for Cattle by the Month

Write for particulars to
KEARNEY VINEYARD SYNDICATE
Kearney Park, Fresno, Cal.

GLENN RANCH,

Glenn County, :: :: California.

FOR SALE In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.



THE HOME CIRCLE.

A New National Anthem.

The following has been widely hailed as a new national anthem. It was written by Hon. Hal Bell of New York City, a member of the New York Legislature, who passed his boyhood in California:

Our country's flag, flag of the brave
Forever float, o'er land and wave;
Forever float, to free and save,
Flag of the true, flag of the brave.
Emblem of joy and faith and love,
Emblem of home and Heaven above,
O, holy flag! flag of the free,
We bless the living God for thee.

The warp and weft are man's heart-strings,
And woman's trust—such sacred things,
Made into thee, through weary years,
Flag of our life and love and tears.
Thy stars are hope's stars, from the sky;
The blue, the blue depths harmony;
The white, the light of freedom spread;
Thy red, the blood of martyrs shed.

Great flag! proclaiming heaven's decree
And message, to all men, "Be free!"
Help of the weak, strength of the right,
On every field, where wrong is might,
Symbol of man's redemption, hail!
Symbol of God's salvation, hail!
We lift our souls in praise to thee,
O flag of God and liberty!

Flag of man's prayers against despair,
Flag of free schools, free press, free air,
Free church, free men, free earth, free sea,
Mercy and peace, humanity.
Flag of the North, South, East and West,
Mainlands and islands far, and blest,
Forevermore be thou unfurled
As freedom's banner of this world.

Hope of mankind, "Old Glory" be,
The oppressed release, all races free,
From pole to pole, from zone to zone,
Such is thy way, lead on, and on.
Guide on, flag of man's brotherhood,
Guide on, flag of God's fatherhood.
Lead on, across earth's seas and sod,
O flag of man! O flag of God!

The Man and the Doll.

The little party straggled listlessly enough down the village street. Valentine brought up the rear with Mrs. Winston, and he was gracious enough to evince a brave show of interest in her words, but his eyes and his mind were busy with the brightness ahead. The sky, and the grass, and the sunlight, all the color, and beauty of the river world, seemed to blend with and breathe upon the girl, to sum their own perfection in her loveliness, to honor her as the rose of that June day. To Valentine the flutter of her thin gown about her ankles appealed as a miracle, and the poise of her fair head a favor vouchsafed by heaven. While he listened with feigned intensity of attention to Mrs. Winston's fluent appreciation of early Italian poets, a confusion of mellifluous names, he was trying to find the right words, the exquisite, exact words to match her daintiness, to translate her grace. What poet in all the spacious cemetery of dead singers ever praised such a lady? What lover ever loved a woman with the same fine heat that burned for her in his heart? Did Winston, walking ahead with Miss Bennett, once feel as Valentine felt? His gaze traveled over the faded prettiness of Clara Winston's face, and, while his consciousness remained indifferent to her brisk speech, his imagination renewed her youth, rejuvenated Winston, the plump and red, weighed them in the balance with his love and the girl he loved, and found them wanting. No sense of humor pricked him as he turned his head to look again at Lena Sutton. She was laughing merrily at some jest of Harold Culpin's, and he knew that her laughter rang fresh and sweet over the fields of fairyland. He thought, in a great ecstasy, that he might hope to call that delicate creature his, and he smiled a superior smile as his memory persisted in finishing the quotation.

The march came suddenly to a halt. Winston and Mabel Bennett had stopped in front of one of the few shops that the single street of the little river village sheltered. Lena and Culpin had stopped in their turn, and the

four clustered around the window chattering and laughing.

"They have found something amusing," said Mrs. Winston, eagerly, dissipating her Italian poets into air in her sudden appreciation of some possible excitement in an unexciting place. Her leisure pace quickened to something resembling a run; Valentine followed his heart in following her impulse, and the group in front of the shop window became six.

"What have you found?" asked Valentine, but he was not thinking of the shop or looking at its ironic summary of the human game; he was feasting on the soft face of Lena Sutton, flushed now to his fancy, with a diviner pink than the dawn. Harold Culpin answered him, smiling drily as he always did when amused, and speaking in his shrill staccato.

"The Philosopher's Stone; the Elixir of Youth; an hour's diversion." He pointed to a corner of the window where a doll reclined, a large and gaudy doll, liberally crimson of cheek, liberally blue of eye, liberally yellow of hair, illiberally garmented in a skimpy cotton shift.

"Are you going to buy a doll?" Mrs. Winston asked, astonished.

"We are going to have a cockshot," she said, "the rustic sports of old England revived on the village green. Buy that doll, somebody; we'll stick it up and pelt at it, and I'll give a prize to the best marksman."

Culpin bought the doll for a couple of shillings when he had succeeded in persuading the shopkeeper that he meant business, and was not merely making game of him, and then they all streamed out again from that queer wizard's cave into the sunny, sleepy street. Where the street ended a green began, a green that was almost a common, a green bisected by a wide, white path that led to the station, that was fringed with venerable trees, and boasted a pool beloved by thirsty cattle. Lena Sutton led the way to a quiet corner.

Culpin, ever manually dexterous, prodded a stick in the ground, propped the blatant image against it, and marked the place upon the grass where the competitors were to stand. The party scattered, collecting stones and sticks, rallied again, loaded with whimsical ammunition, toed the line properly, under the auspices of Culpin, and the fun began.

It seemed at first rather poor fun to Valentine. There were many things he would rather have done with the lees of that summer day than to stand one of a row on a space of rusty grass and fling stones and sticks at a foolish effigy of humanity. He had hoped for a solitary ramble with Lena among the scented lanes; he had dreamed of an hour alone with Lena, steering his punt through the shining shallows of some lonely backwater. There was something he wanted to say to Lena, something sweet and secret and sacred, which his lips had not yet uttered, however much his mind might have long since betrayed the purposes of his heart.

He had aimed listlessly while he thought and his bit of flint flew wide of the mark. Mrs. Winston followed with like result. Culpin, always dexterous, struck the doll on the shoulder and made it stagger a little, but it still remained a target perpendicular against its pole. Winston cheered the success; Mabel Bennett jeered the failure; Mrs. Winston pointed out the resemblance of the doll to the conventional Christian martyr in the conventional arena. Valentine turned to look at Lena, and suddenly felt his breath fail and his heart tighten. The girl was leaning forward with fiercely shining eyes; her warm, red mouth was strained tense; her balanced body poised rigidly eager; so might Diana have looked after Actæon and the valley rang with the cries of the human stag. The stone she held, truly aimed, struck the pilloried puppet on the painted face, tearing away a piece of waxen cheek, and, with an ugly shudder that mountebanked vitality, the doll reeled in a heap on the ground. Winston and the two women applauded vociferously; Lena and Culpin ran for-

ward together, the one to examine the result of her cast, the other to restore the martyr plaything to its place against its gibbet. Only Valentine said nothing, did nothing. He stood quite still, while a queer feeling surged over him a feeling, as if he were going to faint, as if he were going to be violently sick, as if grass and sky were in conspiracy to deceive him by shuffling their relative positions with incredible swiftness.

He was himself again in a moment, but from that moment the game had gained a new significance for him. Till then it had seemed a stupid, foolish business enough, the idle invention of an idle afternoon; now it appeared like a nightmare, dim and barbarous. His own flesh seemed to be torn, his own being to bleed with the wounds of the doll; all childhood, all motherhood screamed at him in shrill pain from the battered and mangled body; the wail of all the gentler spirits of the world, love, and pity, and tenderness, sounded in his ears, and he longed weakly for the moral courage that would have allowed him to ape the daring of the monk Telemachus, who leaped into the Roman blood ring and bought with his life an end to the battle of living men. All that was best in him wanted him to place his body as a bulwark for the ruined plaything that represented so much in its piteous dissolution. But he did not dare. The sneer on Culpin's face, the derision in Lena's eyes chilled him as he thought—and the game went on. He threw when his turn came, but his missiles went ever wide, shamefacedly sparing the mark amid the mockery of his companions, who pelted away lustily, unconscious of the latent tragedy, with varying fortunes. The girl that Valentine loved was the luckiest in her aim, and there was the final blow that left the outraged toy so battered as to seem profitless for further sport.

The excitement was over; the artillery exhausted; the hunting spirit flagged. Lena's suggestion that another might be extracted from the little shop was overborne by numbers; Mrs. Winston's brief enthusiasm had evaporated, and Mrs. Bennett insisted sturdily upon tea. As they stood in debate on the edge of the white highway, Valentine, silent and slightly apart, wondered at his mood. His speculations and the argument for and against immediate adjournment to the tea table were interrupted by an exclamation from Culpin. "By Jove, look there," he said, and pointed the lean forefinger of a long hand at the deserted shambles. Along the narrow footpath, worn through the common grass, a little girl was coming. The footpath was one of many that radiated from the neighborhood of a distant schoolhouse; the girl, who seemed to be about six years old, had some schoolbooks under her arm; she was just a poor commonplace little child, traveling her commonplace route at the conclusion of her commonplace day. But she had seen from afar the doll lying on the ground and at the sight her steps had quickened, and it was to this that Culpin had called attention with a smile on his unkind face. His group stood in silence and looked on as the little girl, unconscious of being watched, but conscious of the colored muddle on the ground, ran quickly to the spot where the doll lay. They saw her stoop over the ruin, look at it for a few seconds in surprise and doubt; then, taking up the dilapidated carcass in her little arms, she moved away, sorely embarrassed by the addition to her load, but hugging her worthless discovery tightly. Culpin laughed loudly as the little figure stumbled away in the direction of some cottages on the far edge of the green; the others laughed a little; Valentine did not laugh at all.

The others had already begun to amove in the direction of home. Lena and Culpin turn to followed them. Valentine lingered behind under the pretense of filling a pipe. But he did not rejoin his companions. He halted at the door of the accommodating, comprehensive shop, and, vividly aware of his own heart beats, he went in. Again the old

trader rose upon him, gnomelike, from the darkness; again the same look of incredulity vexed his ancient face as Valentine asked him if he had another doll like the one that had already been bought there. No, the old man had not one quite the same, but, he added cautiously, he had a more expensive article and, in obedience to Valentine's encouraging nod, he produced from a cupboard another doll, enveloped in tissue paper, which proved to be larger than the first, more florid of cheek, more full of figure, more yellow as to the hair, and more blue as to the inexpressive eye. It was a shilling more than the other, and the old shopkeeper eyed Valentine dubiously as he said so much, fearful that fate could not really accord him two such cases of custom in a single day. He was swiftly and pleasantly disappointed. Valentine paid the money, seized the doll, darted out of the shop and ran at full speed toward the cottage in which the child had disappeared.

The cottage was a laborer's cottage, small and mean, with a small, mean strip of garden in front, bulwarked by a small mean wall. As Valentine leaned inquiringly upon this wall, a woman came to the open door and looked a challenging inquiry. Valentine, self-conscious and embarrassed, stammered out his errand. He wanted to see the little girl who had come in just now with a broken doll in her arms. Valentine immediately unfolded his old doll and handed it to her. Without a word she received it in one arm, released to do so from the clasp that enclosed the other puppet, and stood there staring at him between the two delusive images of herself. Valentine swiftly silenced the woman's voluble and unavailing calls upon the child to "thank the gentleman" by slipping a half-crown into her hand, and, turning on his heel, made off in the direction of the village, as if he were walking for a wager. Only once he turned his head. The woman was looking after him in stupid wonder. The child was looking at her possessions. Her little head bent for an instant to kiss one of her new family—and it was the battered doll that she kissed.

When the river was silver with moonlight Valentine stood at the end of the garden smoking a cigarette. The fine smoke, rising into the quiet air, seemed to him like the last faint exhalations of a funeral pyre, the pyre of dead love and wasted beauty and lost hope. Valentine turned to see the slight, graceful figure gliding over the grass, the floating white draperies, the comely coils of hair upon the uncovered head. His heart had ached before with pleasure; it ached now, but the ache was only pain as he looked into the beautiful face and read there an annoyance that was almost anger, a surprise that was almost a regret. There were some seconds of age-long silence and then the girl spoke.

"Clara tells me that you are going away to-morrow. Is it true?" Valentine felt his lips tighten queerly as he answered quietly, "Quite true."

"Why are you going away?" she asked imperiously, and he thought that her eyes were bright and that her lips were red, and the dull pain at the core of his being grew keener, but he only answered: "Do you really wish to know?"

He was looking straight into her pale, strained face now, and he spoke slowly. "I am going away because I have lost something that I cared for very much—once." He wondered that he could say the words at all; he wondered even more that he could say them so easily. The girl's face softened a little. "Are you angry with me?" she asked. He shook his head. "I have no right to be angry." "Do you think I was flirting—" she began, but he stopped her.

"You called me sentimental to-day," he said gently; "so I am, I suppose. It's no use our talking about it, for you wouldn't, couldn't, understand. You know well that I have lived through these summer days feeding on a great hope, cherishing a great desire, loving a great love."

She interrupted him impatiently. "Of course, I know that," she said; "your eyes, your voice, everything be-

trayed you. What has happened?" "Nothing—to you; everything to me," he replied, simply and sadly. "I can't talk of it. I am only going away." "But you must talk of it," she insisted. "I have the right to know. What has come between us?" He straightened himself and looked away. "Death," he said, and the girl, astonished, echoed him, "Death?" "Yes," he went on. "Between me and my heart's desire there lies a dead body—the body of a doll. When a man loves a woman so dearly as to ask her to be his wife he must remember that the wife may be a mother. That doll revealed you, denounced you—forgive me—judged you. Don't let us say any more. We should not have said so much."

Their eyes met now steadily and the look on the girl's face was not pleasant. Then she turned and went into the house, and a few minutes later Valentine, standing there, heard the piano jingle and her sweet fresh voice singing the drunken song from "The Belle of New York."—Justin McCarthy in Chicago Tribune.

The Evil of Heavy Hats.

When traveling in countries where the great majority of the people habitually walk bareheaded, as is the case in many parts of Italy, for instance, one can hardly help noticing the great number of handsome heads of hair seen on the streets. This fact must be accepted as one of the strongest proofs that the hat is the most fruitful cause of baldness. It is certain that there are more bald men than bald women in the world, although if women were condemned to wear heavy, unyielding felt and silk hats as men are, they would probably suffer as much.

The headgear to which men are condemned for the greater part of the year has several qualities inseparable from it which tend to lower the health of the scalp and injure or entirely destroy the hair, and in a lesser degree women's hats come under the same condemnation. These qualities are weight, lack of ventilation and tightness. Any hat which causes a sense of oppression and heaviness across the brow will injure the growth of the hair.

Let any woman who has worn for months or years small, light bonnets set back from the face put on a stiff felt hat that rests upon the brow, and she will soon realize how vigorously her whole head resents the unwonted tyranny. She will find herself constantly lifting the weight to gain a moment's relief and fresh air for the imprisoned and rebelling nerves and brain. If she persists in wearing the hat, in a short time the danger signals cease. Her brow becomes apparently indifferent to the insult; it has given its warning—its danger-signals of pain and discomfort—and now adapts itself to the new burden. But the harm goes on, nevertheless. The scalp suffers from overwork, overheating and lack of ventilation, and in a short time the thinning temples and dull, nerveless hair will tell the tale.

The growing custom for women of removing the hat in public places, together with the extreme lightness of the structures demanded by fashion for the greater portion of the year, should result in a noticeable improvement in this respect, for with the hair as with all the rest of us, good looks cannot exist without good health.—Youth's Companion.

DOMESTIC ECONOMY.

Hints to Housekeepers.

The ordinary, every-day omelet will put on a new air if, as soon as it is "set," it is cut into quarters and each piece is rolled separately before being removed from the pan.

When buttering pans, Dario moulds, cake tins, or anything which requires greasing, use a small, flat bristle paint brush. It costs ten cents, and if kept clean will last for years.

If one has butter that is not entirely

sweet, add to it a little more salt and a pinch of soda and bring to a boil on the stove. When cold, remove the cake, wipe it dry, and it will be found perfectly sweet for cooking.

Cold soda biscuits can be dipped quickly in water and heated through, or they may be sliced thinly, toasted crisply and served with coffee. Cold muffins are good split and toasted. Cold Johnnycake, sliced thin, makes a sweet, crisp toast for breakfast.

If you have no fat at hand in which to fry croquettes, roll them pyramid shaped, set them on their broad base in a baking pan, pour a tablespoonful of melted butter over each one and bake in a hot oven till crisp and brown. It will take from ten to fifteen minutes to cook them.

Do not throw away the salt left in the ice cream pail after freezing. Pour it into a colander, shake the water from it and leave it there till it dries, then return to the bag to be used again. You will be surprised to find nearly a pint of salt saved after the freezing of a couple of quarts of cream.

Iced peaches appropriately begin a hot weather luncheon. The peaches are not to be frozen, but kept on the ice after they are halved, peeled, and sprinkled with sugar, until they are thoroughly chilled. A small spoonful of whipped cream may be served with them if that combination is liked.

Domestic Hints.

PINEAPPLE ICE.—One quart of water, a pound and a quarter of sugar boiled and skimmed as before, and the juice of one lemon and a large, perfectly ripe pineapple, carefully peeled and shredded fine with a silver fork; freeze.

MINCED CLAMS.—Twenty-five clams, two tablespoonfuls butter, two tablespoonfuls flour, one gill cream, salt and pepper. Melt the butter, add the flour, and mix until smooth. Then add the clams, chopped fine, with half a pint of their liquor. Cook fifteen minutes. Just before serving, add the cream and bring to a boil.

CREAM RICE PUDDING.—Two tablespoonfuls cold boiled rice, three tablespoonfuls sugar, yolk one egg, three tablespoonfuls cornstarch, two cups milk, one-half teaspoonful vanilla. Put the milk with cold rice in a double boiler, add the sugar and salt. When it boils, add the cornstarch wet in a few tablespoonfuls of cold milk. Just before it is ready to take from the fire, add the egg and flavoring. Eat cold with whipped cream.

COFFEE FILLING FOR CAKE.—One cup hot milk, one-half teaspoonful butter, two egg yolks, two tablespoonfuls cornstarch, one-half cup very strong coffee. Beat the yolks until thick and lemon-colored. Add the sugar and cornstarch, then the milk and butter, and cook until it boils. Add the coffee. Return to the double boiler and cook until thick. When cool, fill the cake and cover it with a coffee frosting.

FRIED STUFFED EGGS.—Prepare the eggs as for stuffed eggs, filling the cavity of the whites evenly, and pressing the two halves together so as to

make it appear as a whole egg. Take what is left of the mixture, add to it one raw egg beaten light, roll each egg in this, covering thoroughly every part of it, and fry in boiling fat. Serve around a dish of green peas, or with a cream sauce into which has been stirred, just before removing from fire, two slightly heaping tablespoonfuls of grated Parmesan cheese.

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Sept. 10, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec	May
Wednesday.....	67 1/4 @ 68 1/2	69 1/4 @ 70 1/4
Thursday.....	68 1/4 @ 69 1/2	70 1/4 @ 71 1/4
Friday.....	68 1/4 @ 69	70 @ 70 3/4
Saturday.....	68 1/4 @ 69 1/2	70 1/4 @ 71 1/4
Monday.....	67 3/4 @ 68 1/2	69 @ 69 3/4
Tuesday.....	68 1/4 @ 69	69 1/4 @ 70 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	31 @ 31 1/2	31 @ 32
Thursday.....	31 1/4 @ 31 1/2	31 1/2 @ 31 3/4
Friday.....	31 1/4 @ 31 1/2	31 1/2 @ 31 3/4
Saturday.....	31 1/4 @ 31 1/2	31 1/2 @ 31 3/4
Monday.....	30 3/4 @ 31	30 3/4 @ 31 1/4
Tuesday.....	30 3/4 @ 31 1/4	30 3/4 @ 31 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 13 1/4 @ 13 1/2	\$1 15 1/4 @ 15 1/2
Friday.....	1 14 1/4 @ 14 1/2	1 17 @ 17 1/2
Saturday.....	1 14 1/4 @ 14 1/2	1 16 1/2 @ 16 3/4
Monday.....	1 14 1/4 @ 15	1 16 1/2 @ 16 3/4
Tuesday.....	1 16 1/4 @ 15 1/2	1 18 1/4 @ 18 1/2

WHEAT.

Efforts to depress values for wheat are not meeting with any marked success, although shippers have been holding back as much as possible in their buying, hoping by this means to bring sellers to their terms. Those interested in bearing the market have been endeavoring to make it appear, through their agents, as also through the press and in any other way which might present itself, that farmers should unload now. These same parties, shippers and speculators, had viewed the situation over in both hemispheres, north and south, raking the field, as it were, with a fine tooth comb, to secure all information possible, in the interest of the producer, of course, and had come to the conclusion that this was the time for the grower to sell. This means nothing other than that the parties setting forth this information want to get the market in a position to be able to buy to advantage. If the same operators were loaded up with wheat they would endeavor to keep other parties off the market, so as to be able to unload to good advantage. Nearly all the information heralded by those interested financially in the market is cooked up for the purpose of either bulling or bearing values, just as their interests for the time require. The future cannot, of course, be outlined with any great accuracy, but there is nothing at the moment in sight to demonstrate that wheat is now high, or that it is likely to go begging for custom this season at unprofitably low figures.

California Milling..... 1 17 1/4 @ 1 20
Cal. No. 1 shipping, alongside..... 1 13 1/4 @ 1 15
Oregon Valley..... @
Washington Blue Stem..... @
Washington Club..... @
Off qualities wheat..... 1 10 @ 1 12 1/2

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	5s 11 1/4 @ 5s 0d	6s 4 1/4 @ 6s 5d
Freight rates.....	37 1/4 @ 38 1/4	22 1/4 @ 23s
Local market.....	96 1/4 @ 1 00	1 13 1/4 @ 1 16 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

CALL BOARD PRICES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.13 1/4 @ 1.16 1/2.
May, 1903, delivery, \$1.15 1/4 @ 1.18 1/2.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.16 1/2 @ 1.15 1/2; May, 1903, \$1.18 1/2 @ 1.18 1/2.

LOCAL STOCKS OF GRAIN.

Stocks of grain in Call Board warehouses on August 1st and September 1st:

Tons—	August 1st.	Sept. 1st.
Wheat.....	41,471	*67,337
Barley.....	40,547	†62,066
Oats.....	5,862	6,985
Corn.....	1,622	1,463

*Including 27,106 tons at Port Costa, 39,752 tons at Stockton.
†Including 48,936 tons at Port Costa, 10,140 tons at Stockton.

Stocks of wheat in Call Board warehouses on 1st inst. show an increase of 25,866 tons for the month of August. A year ago there were 110,871 tons wheat in Call Board warehouses.

FLOUR.

The outward movement was not so heavy as preceding week, but was still of very fair average proportions. Business on local account was of moderate volume. Quotable values continued at previously noted range, with sellers as a rule not disposed to grant material concessions. Compared with current wheat values, flour is going at low figures.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

Strength has continued to be developed in the market for this cereal, more particularly for the lower grades or feed descriptions, prices for which have been crowded close to the figures obtainable for export and brewing grades. This is accounted for by the light proportion of offerings showing low grade, and the additional fact that the shorting of the market is almost wholly of feed qualities. Those who have sold short in the speculative market have been anxious to get out, and in their scramble to fill have been more or less scorched. No. 1 feed, May delivery, touched \$1 06, or a little more than could be readily realized at same time for spot offerings of best export grades. Shipments continue to be made in wholesale quantity, mainly to Europe.

Feed, No. 1 to choice..... 1 00 @ 1 02 1/2
Feed, fair to good..... 97 1/2 @ 1 00
Brewing, No. 1 to choice new..... 1 02 1/2 @ 1 05
Chevalier, No. 1 to choice..... 1 20 @ 1 30
Chevalier, common to fair..... 1 00 @ 1 15

OATS.

Weakness has not been quite so pronounced in the market for this cereal as for several weeks preceding. The improvement was not so much attributable to increased inquiry or to any material advance in the bids of buyers, as to the firmness of other feed cereals making oats decidedly cheap at current figures and causing less selling pressure.

White Oats, fancy feed.....	1 20 @ 1 22 1/2
White, good to choice.....	1 10 @ 1 15
White, poor to fair.....	1 02 1/2 @ 1 07 1/2
Gray, common to choice.....	1 05 @ 1 12 1/2
Milling.....	1 15 @ 1 20
Surprise, good to choice.....	1 17 1/2 @ 1 22 1/2
Black Russian.....	90 @ 1 10
Red.....	85 @ 1 12 1/2

CORN.

Stocks are mainly Large Yellow, and these have been reduced considerably within the past fortnight. There has been lately a fair shipping demand, mainly for Australia. While the market presents a slightly better tone, there is no advance to record in quotable rates. Present prices are on too high a plane for corn to be consumed freely.

Large White, good to choice.....	1 50 @ 1 60
Large Yellow.....	1 40 @ 1 45
Small Yellow.....	1 42 1/2 @ 1 45

RYE.

In consequence of recent shipments to Europe and Australia, there is a little better tone to the market and a disposition to ask slightly higher figures than lately current.

Good to choice.....	87 1/4 @ 92 1/4
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BUCKWHEAT.

No evidence of any trading in this cereal. Quotations are unchanged, but values are necessarily poorly defined, owing to the prevailing dullness.

Good to choice.....	1 55 @ 1 70
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BEANS.

There is not much doing in beans of any description. Stocks of old have been worked down to rather small compass, and new crop has not yet begun to come forward in wholesale quantity. Harvesting is now under full headway in the Sacramento river section, and the outlook is for a good crop of good quality. Values throughout are being maintained about as last quoted, and nothing to warrant anticipating any serious breaks in prices in the near future, unless it be for Black-eye beans, values for which have been lately abnormally high.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 50 @ 2 60
Lady Washington.....	2 30 @ 2 40
Pinks.....	2 10 @ 2 15
Bayos, good to choice.....	2 95 @ 3 05
Reds.....	2 25 @ 2 50
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 75 @ 3 85
Black-eye Beans.....	3 60 @ 3 75
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

The market remains quiet, with only Green Dried offering at present. Millers and jobbers are well stocked with Green or Blue, and there is not likely to be any very active demand for this variety for some time. Niles or White Peas are too

scarce to be quotable in a wholesale way. Offerings of new crop Niles are likely to meet with a firm market.

Green Peas, California.....	1 30 @ 1 50
Niles Peas.....	@

WOOL.

Spot stocks continue of light volume, and include very little of desirable quality in the offerings from first hands. Northern Fall is beginning to come forward, and fairly liberal offerings of same are expected in the near future, with prospects of all wools in prime to choice condition meeting with prompt custom at full current values. The markets East and abroad are reported in generally healthy condition.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

No heavy quantities of new hops have yet come forward, but there are more than enough spot offerings to accommodate all buyers at full prices asked, the quotable range, based on asking figures, being nominally 21 @ 24c for good to choice 1902 hops. Some shipments are being made eastward and to Europe direct from interior points. A New York review states as follows:

"Business on the local market has been of small volume, and the limited quality of 1901 hops left in first hands makes it quite certain that no activity will be shown until the new crop comes forward. Prices are well sustained, however, on all grades, and holders are generally firm in their views. We note quite a movement in old olds, one line of 700 bales States selling on the market at 6c. A few bales of new seedlings have arrived and sold to brewers at extreme prices. From advanced figures from the Revenue Department it looks as if the falling off in consumption of malt liquors for July was not over 200,000 bbls. as compared with July of last year, when the consumption was exceptionally heavy. Crop advices from New York State have been more unfavorable this week, a severe attack of lice being reported in many sections, and unless the weather conditions are such as to prevent the trouble spreading there will be a serious loss of quality and a reduction in the yield. Some of the seedlings are being picked and the fear of damage from vermin may start picking on the main crop before it is sufficiently matured. It is said that 31,000 bales of the Oregon crop have been contracted; if this is true it would indicate about one-third of the Coast crop now under contract. Conditions in England are about the same as reported of late. Germany will have a large crop. Mail advices say that England is buying quite largely of cheap German hops at 40 marks."

HAY AND STRAW.

The hay market is showing much the same condition as for some weeks past, arrivals and offerings continuing of sufficiently liberal volume to prevent the development of any noteworthy firmness. While there may be no radical changes in the near future, fluctuations are more apt to be to firmer than to easier figures. Stocks in the hands of producers are understood to be now light and most of the crop is reported in warehouses or under cover.

Wheat, good to choice.....	9 50 @ 12 00
Wheat and Oat.....	9 00 @ 11 50
Wild Oat, good to choice.....	6 50 @ 9 00
Barley.....	6 00 @ 8 50
Clover.....	7 50 @ 9 50
Volunteer.....	6 50 @ 7 50
Compressed.....	9 00 @ 12 00
Straw, 1/2 bale.....	37 1/2 @ 45

MILLSTUFFS.

While spot stocks and offerings of Bran and Middlings are of fair volume, and more than sufficient for immediate requirements at full current rates, supplies are mostly in few hands, so there is little or no selling competition. Rolled Barley is higher and firm at the advance. Milled Corn is fairly steady, but movement is not extensive.

Bran, 1/2 ton.....	19 50 @ 20 50
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 00 @ 22 50
Barley, Rolled.....	21 50 @ 22 50
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Little doing in this department. Values for the several kinds mentioned below are

quotably as last noted, but are in the main largely nominal, in the absence of any noteworthy trading. The quantities of most varieties offering at present are not sufficient to admit of wholesale trading.

	Per ctt.
Flax.....	2 25 @ 2 50
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 25
	Per lb.
Canary.....	3 1/4 @ 3 1/2
Rape.....	1 1/4 @ 2
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Same inactivity previously noted is prevailing in the bag market. There are no special changes to record in quotable rates. There is a weak tone to Grain Bags, with prospects of still lower prices the coming campaign than prevailed the past season.

Calcutta Grain Bags, buyer June-July.....	@
Calcutta Grain Bags, spot.....	5 1/4 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 6
San Quentin Bags, 100.....	5 50 @
Wool Sacks, 4 lbs.....	35 @ 38
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Demand is good for Hides, both Dry and Wet Salted, but more particularly for the former, with market firm at the quotations. Pelt market is not showing much activity, but values are without quotable change. Tallow is in fair request at previously quoted figures.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @	9 1/4 @
Medium Steers, 48 to 56 lbs.....	10 @	8 1/4 @
Light Steers, under 48 lbs.....	8 1/4 @	7 1/4 @
Heavy Cow Hides, over 50 lbs.....	9 @	8 @
Light Cow Hides, under 50 lbs.....	8 1/4 @	7 1/4 @
Stags.....	7 @	6 @
Wet Salted Kip.....	8 1/4 @	7 1/4 @
Wet Salted Veal.....	9 1/4 @	8 1/4 @
Wet Salted Calf.....	10 @	9 @
Dry Hides.....	16 @ 17	15 @
Dry Kip and Veal, 11 to 16 lbs.....	13 @	11 @
Dry Calf, under 4 lbs.....	18 @	16 @
Salted Horse Hides, large.....	2 75	@ 3 00
Salted Horse Hides, medium.....	2 25	@ 2 50
Salted Horse Hides, small.....	1 50	@ 2 00
Dry Horse Hides, large.....	1 75	@
Dry Horse Hides, medium.....	1 50	@
Dry Horse Hides, small.....	1 25	@
Dry Colts' Hides.....	50	@
Pelts, long wool, 1/2 skin.....	80	@ 1 00
Pelts, medium, 1/2 skin.....	50	@ 75
Pelts, short wool, 1/2 skin.....	30	@ 40
Pelts, shearling, 1/2 skin.....	15	@ 30
Deer Skins, best summer.....	35	@
Deer Skins, good medium.....	—	@ 30
Deer Skins, thin winter.....	—	@ 20
Elk Hides.....	10	@ 12
Tallow, good quality.....	5 1/4 @	@ 6
Tallow, No. 2.....	4 1/4 @	@ 5
Goat Skins, perfect.....	30	@ 37 1/2
Goat Skins, small.....	10	@ 20
Kid Skins.....	5	@ 10

HONEY.

Market inclines against buyers, with not much offering at this center or at producing points. Should the usual amount be consumed there is likely little more now in the State than will be absorbed by the home demand. Present prices will tend, however, to check the consumption and will encourage the foisting upon the market of adulterated honey and substitutes.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	13 @ 14
Amber Comb.....	10 @ 12
Dark Comb.....	8 @ 9

BEESWAX.

Very little arriving and no probability of the market being burdened with offerings the current season. Values are being well maintained at the quoted range.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is in fair request at quotably unchanged rates, with no excessive supplies and not likely to be in the near future. Market for Mutton shows steadiness, the demand being sufficient to sustain values at current range. Neither Veal nor Lamb is in heavy receipt and desirable stock is meeting with a good market. Hogs brought fully as good average figures as preceding week, with arrivals of only moderate volume and no lack of demand.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterer's profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @
Beef, second quality.....	6 1/4 @
Beef, third quality.....	6 @
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4

Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 6 5/8
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, # lb.....	8 @ 9 1/4
Veal, large, # lb.....	7 @ 8 1/4
Lamb, spring, # lb.....	9 @ 9 1/4

POULTRY.

Much the same conditions prevailed in the poultry market as during preceding week. Neither domestic or Eastern was in excessive supply, and it was the exception where offerings other than inferior failed to meet with prompt custom at full current figures. Demand was mainly for Chickens, and in consequence the firmness of the market was most pronounced on this fowl.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, choice young.....	17 @ 18
Turkeys, alive, Hens, # lb.....	15 @ 16
Turkeys, alive, Gobblers, # lb.....	15 @ 16
Hens, California, # dozen.....	4 50 @ 6 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	4 50 @ 6 00
Fryers.....	4 00 @ 4 50
Broilers, large.....	3 50 @ 4 00
Broilers, small to medium.....	3 00 @ 3 50
Ducks, old, # dozen.....	2 50 @ 3 00
Ducks, young, # dozen.....	2 50 @ 3 00
Geese, # pair.....	1 25 @ 1 50
Goslings, # pair.....	1 50 @ 1 75
Pigeons, old, # dozen.....	1 00 @ 1 25
Pigeons, young.....	1 25 @ 1 50

BUTTER.

There is more fresh butter on the market than custom can be found for at full prices quoted, despite the higher quotations announced by some parties who are posing as great friends of the producer. The higher quotations are not only incorrect, but they are working against the interests of the producer and in favor of some local and Eastern speculative operators, giving them the opportunity to foist held or cold storage stock upon consumers in greater quantities and at bigger profits than would be possible were prices for fresh not crowded to unwarranted levels for the purpose of driving trade on to these speculative holdings. Some of the daily papers are depicting the absence of an exchange to fix quotations for dairy products and save the reporter's time and shoe leather. To make the reporter's life an easy one, there probably should be more exchanges, dominated by a "Big Four" or "Six" or some other combination to fix things to gull the public and swindle the producer.

Creamery, extras, # lb.....	28 1/2 @ 29
Creamery, firsts.....	25 @ 27 1/2
Dairy, select.....	26 @ —
Dairy, firsts.....	24 @ 25
Dairy seconds.....	20 @ 22 1/2
Flrkin, good to choice.....	20 @ 22 1/2
Mixed store.....	17 @ 18
Pickled Roll.....	21 @ 23

CHEESE.

Stocks of domestic product are of quite moderate volume, particularly so of mild-flavored new of high grade. The latter is commanding in a small way a slight advance on quotable rates. While current values for other grades are being fairly well maintained, buyers are not taking hold freely at full figures.

California, fancy flat, new.....	11 1/4 @ 12
California, good to choice.....	10 1/2 @ 11
California, fair to good.....	— @ —
California, "Young Americas".....	11 1/2 @ 13

EGGS.

Fresh eggs which are strictly select in every respect are not plentiful and are bringing tolerably stiff prices, especially in a small way, selling up to 33c., including city delivery. But fresh eggs, which run irregular as to size and color, are moving rather slowly and at comparatively low figures, having to compete with Eastern and cold storage eggs, these being offered freely.

California, select, large, white and fresh.....	31 @ —
California, select, irregular color & size.....	25 @ 29
California, good to choice store.....	22 @ 24

VEGETABLES.

There was little variation in the prices of vegetables from the figures of preceding week. Seasonable varieties were fairly well represented, although the proportion of choice to select of most kinds was not heavy, and especially was this the case as regards Corn, Peas and Beans. The Onion market showed a little firmer tone, in consequence of recent heavy shipments to Australia. Tomatoes continued in more than ample supply for the immediate demand at full current rates, and concessions to buyers were of rather common occurrence.

Beans, Lima, # lb.....	3 @ 4
Beans, String, # lb.....	1 1/2 @ 2 1/2
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @ 65
Corn, Green, Alameda, # crate.....	75 @ 125
Corn, Green, # sack.....	50 @ 1 00
Cucumbers, # large box.....	30 @ 60
Egg Plant, # large box.....	40 @ 50
Garlic, # lb.....	1 1/4 @ 2
Onions, Yellow Danver, # cental.....	55 @ 65
Okra, Green, # box.....	30 @ 60
Peas, Sweet garden, # lb.....	2 1/2 @ 3 1/4

Peppers, Green Chile, # box.....	35 @ 60
Peppers, Bell, # box.....	35 @ 60
Summer Squash, Bay, # large box.....	30 @ 50
Tomatoes, River, # large box.....	25 @ 50

POTATOES.

The movement of potatoes outward from this center was not so brisk as preceding week, and the market was hardly so firm, although in the matter of quotable values there were no radical changes. Many of the potatoes now offering here are of only fair quality, and for this sort the market inclined against sellers. Sweeters were in increased receipt, mainly from Merced, and were offered at reduced figures.

Burbanks, Salinas, # cental.....	85 @ 1 15
River Burbanks, good to select, # cental.....	40 @ 65
Early Rose.....	30 @ 45
Garnet Chile.....	— @ —
Sweet Potatoes, # cental.....	1 50 @ 2 00

The Fruit Market.

FRESH FRUITS.

The market for fresh fruits continued on much the same lines as preceding week, although tendency was to slightly better average prices than had been ruling, especially on desirable shipping stock. Inferior fruit of all varieties met with poor custom, even at low figures. Plums fared about the worst of any fruit on the list, although common Bartlett Pears and common Peaches and Prunes suffered much the same shabby treatment. A few Bartlett Pears of high grade brought tolerably good figures on shipping orders. Canners bid up to \$20 per ton for some 3 inch Bartletts, and if they had bid double the figure, they would not have obtained many of the kind in question. Choice Red Nectarines were quotable up to 75c per 20-lb. box, while White were difficult to place over 40c. Figs made a better display than any previous date the current season, and market was rather easy in tone, although choice sold fairly well, Black commanding best figures. Grapes were in fair request, table stock selling at much the same prices as last quoted, while wine varieties in bulk commanded an advance on opening figures. Watermelons were in very fair supply and good demand at steady rates. Cantaloupes and Nutmeg Melons were in reduced receipt and higher. There were no heavy arrivals of Berries of any sort, but demand was not very active and prices remained about as last quoted.

Apples, # fancy, 4-tier box.....	90 @ 1 10
Apples, good to choice, # 50-lb. box.....	60 @ 75
Apples, common to fair, # 50-lb. box.....	30 @ 50
Apricots, Royal, # crate.....	— @ —
Cantaloupes, # crate.....	1 00 @ 2 00
Crabapples, # small box.....	25 @ 50
Blackberries, # chest.....	2 00 @ 4 00
Raspberries, # chest.....	6 00 @ 9 00
Figs, 1-layer box, 40@75c; 2-layer.....	65 @ 1 25
Grapes, Fontainebleau, # crate.....	25 @ 50
Grapes, Isabella, # crate.....	50 @ 90
Grapes, Muscat, # crate.....	40 @ 75
Grapes, Black, # crate.....	35 @ 75
Grapes, Seedless, # crate.....	60 @ 85
Grapes, Tokay, # crate.....	40 @ 75
Grapes, Zinfandel, # ton.....	23 00 @ 24 00
Nectarines, Red, # box.....	50 @ 75
Nectarines, White, # box.....	25 @ 50
Nutmeg Melons, # box.....	50 @ 1 00
Peaches, # box.....	25 @ 65
Peaches, # basket.....	15 @ 25
Peaches, Cling, in bulk, # ton.....	10 00 @ 15 00
Peaches, Freestone, in bulk, # ton.....	10 00 @ 15 00
Pears, Bartlett, No. 1, 40-lb box.....	60 @ 85
Pears, common, # box.....	25 @ 50
Pears, No. 1 Bartlett, # ton.....	10 00 @ 15 00
Plums, # ton.....	6 00 @ 10 00
Plums, choice large, # box or crate.....	30 @ 50
Plums, small, # box.....	15 @ 30
Prunes, Tragedy, # crate.....	25 @ 50
Strawberries, Longworth, # chest.....	6 00 @ 9 00
Strawberries, Melinda, # chest.....	3 00 @ 5 00
Watermelons, # doz.....	1 00 @ 3 00
Whortleberries, # lb.....	4 @ 6

DRIED FRUITS.

The market for cured and evaporated fruits is showing a generally better tone than at any previous date since the current season opened. Quotable values have not changed to any appreciable degree, but there is good indication that prices have touched bed-rock, and that any changes from this time forward are more apt to be in favor of the producing and selling interest than the reverse. Especially are the prospects good for choice to select qualities of nearly every description of dried fruit inclining in favor of the producer from this forward. No sudden or radical changes are looked for, but with the general air of confidence that is now being established, no fears need be entertained about lack of demand at prevailing values for all offerings of desirable quality, with hardening of prices later on sufficient at least to cover cost of carrying. The outlook on low-grade fruit is not so bright, but while values for this description may not develop any material improvement, there is little probability of the market for merchantable common qualities dropping materially below current levels. There is a fair outward movement both by sea and rail, and spot stocks show no noteworthy accumulations

of any sort. Figs of new crop are offering in considerable quantity, the season's output of this fruit being probably the largest in the State's record and the quality in the main fine. New crop Prunes will not likely be ready for delivery in wholesale quantity for several weeks yet, and there is no heavy selling for forward delivery, growers in most instances being slow to accept current figures and dealers showing no disposition to materially advance previous bids. New Prunes are quoted on the 2 1/2 @ 2 3/4 basis for the 4 sizes, with 40-50's at 1 1/4 @ 1 1/2 premium, the higher figures being for Santa Clara. Extra large Prunes, or 30-40's, are likely to command fancy figures, with prospects of being too scarce to be quotable in a regular way.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/2 @ 6
Apricots, Moorpark.....	6 1/2 @ 8
Apricots, Royal, good to choice, # lb.....	5 @ 6
Apricots, Royal, fancy.....	6 1/4 @ 6 1/2
Nectarines, # lb.....	4 @ 4 1/2
Peaches, unpeeled, choice.....	4 1/2 @ 5
Peaches, peeled, in boxes.....	— @ —
Pears, halves, fancy.....	6 @ 7
Pears, halves, choice.....	4 1/4 @ 5 1/4
Pears, halves, fair to good.....	3 1/4 @ 4 1/4
Plums, Black, pitted.....	4 @ 5
Plums, Red and Yellow.....	5 @ 6
Prunes, Silver, good to fancy.....	3 1/4 @ 6
Prunes, in bags, 4 sizes, 2 1/4 @ 2 3/4 c; 40-50s, 4 @ 4 1/4 c; 50-60s, 3 1/4 @ 3 3/4 c; 60-70s, 3 @ 3 1/4 c; 70-80s, 2 1/2 @ 3 1/4 c; 80-90s, 2 @ 2 1/4 c; 90-100s, 1 1/2 @ 1 1/4 c.	

COMMON SUN-DRIED.

Apples, sliced.....	4 @ —
Apples, quartered.....	3 1/4 @ —
Figs, White, in bulk.....	3 1/4 @ 4
Figs, 10-lb. box, 1-lb. cartons.....	30 @ 60
Figs, Black, in sacks, # lb.....	2 1/2 @ 3
Peaches, unpeeled.....	— @ —
Pears, prime halves.....	— @ —
Plums, unpitted, # lb.....	1 1/4 @ 2 1/4

RAISINS.

The market is without new feature. Stocks of old still in the hands of packers and wholesale distributors probably aggregate less than forty carloads, and these are likely to be all in consuming channels before new become available. Prices for old are quotably unchanged, and for 1902 product have not yet been established.

CITRUS FRUITS.

Oranges are still in evidence, late Valencias and Seedlings, and are offering at reasonable figures, much the same as last quoted, but fail to prove attractive to very many consumers, owing to the abundance and cheapness of other and more seasonable fruit. Lemons have had warm weather, Admission Day and a Wild West show in their favor, with many a boy and his best girl patronizing the lemonade stands, but the supply is still far from being exhausted, and prices continue on a low plane, quotations remaining practically as last noted. Limes are offering at unchanged rates, another invoice of Mexican product arriving the current week.

Oranges, Late Valencia, # box.....	2 50 @ 4 00
Seedlings, # box.....	1 50 @ 2 00
Lemons—California, select, # box.....	3 00 @ —
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Limes—Mexican, # box.....	4 50 @ 5 00

NUTS.

New crop Almonds are beginning to arrive in wholesale quantity, and are meeting with fair custom, mainly within range of 8 1/2 @ 11 1/2 c. for soft to paper shell, although some very select N. P.'s are held at 12 @ 12 1/2 c. at primary points. No prices for new crop Walnuts have been yet named, but prospects are favorable for a firm market. Old Walnuts are now practically out of stock and are not quotable. Peanuts are offering in only moderate quantity and are ruling steady.

California Almonds, shelled.....	16 @ 20
California Almonds, paper shell, # lb.....	11 @ 12
California Almonds, soft shell.....	8 1/2 @ 9 1/2
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	— @ —
Cal. White Walnuts, No. 2 soft shell.....	— @ —
Cal. White Walnuts, No. 1 hard shell.....	— @ —
Cal. White Walnuts, No. 2 hard shell.....	— @ —
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2

WINE.

The wholesale wine market is showing little life at present, which is nothing remarkable, it being practically between seasons. There is not much of last season's product now remaining in first hands. Dry wines of last season's vintage are quotable nominally at 20 @ 25 c per gallon wholesale, some selections being held at a little higher range. Prices for wine grapes are showing a much wider range than ordinarily. White grapes of high grade, suitable for dry wines, are quotable up to \$30 per ton, and red of only fair quality range down to \$20. Dry wine grapes are quotable as to selection and grade at \$20 @ 26 per ton for red and \$25 @ 30 per ton for white. Sweet wine grapes are quotable at \$12 @ 20 per ton, as to kind and grade, the higher figure being for best white and the lower price for second crop Muscat and Tokay culls.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	142,089	1,193,068
Wheat, centals.....	215,592	1,433,703
Barley, centals.....	325,037	573,858
Oats, centals.....	23,006	1,551,341
Corn, centals.....	20	139,192
Rye, centals.....	17,182	9,513
Beans, sacks.....	8,942	64,476
Potatoes, sacks.....	23,909	39,546
Onions, sacks.....	6,532	219,399
Hay, tons.....	5,908	45,887
Wool, bales.....	1,732	45,646
Hops, bales.....	31	12,949
		16,142
		205

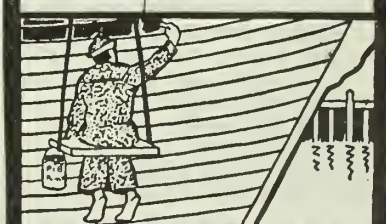
EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	257,144	864,620
Wheat, centals.....	207,185	864,203
Barley, centals.....	306,500	1,132,362
Oats, centals.....	544	7,099
Corn, centals.....	2,746	8,063
Beans, sacks.....	757	3,500
Hay, bales.....	6,536	24,834
Wool, pounds.....	81,985	316,507
Hops, pounds.....	530	3,711
Honey, cases.....	350	435
Potatoes, pack's.....	1,704	13,408
		7,482

California Dried Fruit at New York.

NEW YORK, Sept. 10.—Evaporated apples, common, — @ — c; prime wire tray, — @ — c; choice, — @ — c; fancy, — @ — c. New, 6 @ 10c. California Dried Fruits.—Demand is fair at prevailing rates, with no heavy spot stocks, and for best qualities the market is tolerably firm. Prunes, 3 1/2 @ 7 1/2 c. Apricots, boxed, 7 1/2 @ 10 1/2 c; bags, 6 1/2 @ 10c. Peaches, unpeeled, 9 @ 10 1/2 c; peeled, 12 @ 16c.

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THE DAIRY.

Superiority of Country Milk.

We have often claimed that a city having such quick communication with rural districts as San Francisco should have country milk and there has been in recent years marked progress in that direction. The Jersey Bulletin has a warm leader on the subject, from which we take enough to show the course of affairs.

There has been a big disturbance in numerous large cities about the milk supply. St. Louis and Indianapolis sanitary boards particularly are occupying the stage in their respective localities, and the milkmen are getting about all the abuse that ever comes to one class of merchants. The newspapers are full of it and they are telling all they can find out (and some things they guess at) about how city milk is produced and handled for market.

CITY MADE MILK.—It's a sure thing that many a gallon of city milk, under usual conditions, is born in filth and only kept from quick decay by freezing temperatures and preservatives. Much of it is skimmed or watered, and colored. In addition to dirt and adulteration, there is a pure but poor quality of milk sold, for which the cows or their feed is responsible. It is an old story about the milkman whose cows wouldn't produce milk up to the municipal standard, and who thought he was dreadfully abused when he ran into the requirement of more solids than his cows could yield. But this question has settled itself, wherever the authorities have done their duty, for the wiser dairymen have got cows that give better milk; and in most cities the milkmen who have employed Jerseys or grades, or other cows that get above the limit for solids, are having no trouble on this head.

An excellent treatise on this subject has lately appeared in the Journal of Comparative Medicine, written by Dr. J. M. Carter, a Philadelphia veterinarian, who, after pointing out the dangers of an unclean and unsanitary source of milk supply, says:

"One who has never lived in the country, or been associated with the dairy business, does not know these things, and the majority of the consumers of milk look only at the milk as it appears before them, and think only of the Jersey cow, the green fields, the buxom dairy maid, and the old spring-house, with its cool, crystal water. * * * I think I can safely say that if the consumer were to see the cow that produced the milk used on his table, he would use it very sparingly on his oatmeal and in his coffee, and, least of all, give it to his baby or his sick child to drink. Of course, there are some well equipped dairies and careful dairymen who are producing some wholesome milk, but I am speaking of the great majority of dairies as I have seen them."

The whole business of city milk supply needs constant airing. If the sanitary boards will only keep up the disturbance, and publish the names of the men whose milk is dirty, or is "embalmed," or not up to standard, as it was proposed to do in Indianapolis, the worthy purveyors will get the

credit and the business which is due them, and the guilty alone will suffer. But the great trouble with these milk reforms is that they only flourish a while in hot weather. Just about the time the consumers think something decisive is to be done, an immaculate coat of whitewash is smeared over some of the worst cases—a reprimand here, a little fine there, and an occasional "appeal" never heard of again—and lo! the summer is gone without shedding the blood of a microbe. The revolution then retires to hibernation, while the citizen takes his dirt cold for a spell.

THE CITY NO PLACE FOR COWS.—There is no question but that much of the trouble with city milk is that it is produced right in the city, where conditions are such as to render even comparative cleanliness difficult. A "city dairy" is an anomaly, anyway. The city is no place for cows for commercial purposes. Milk for market should be produced on the farm; the chances for contamination there are less, and the opportunities for high quality are greater. If all the cows were removed to the country (except where they are kept for family use in suitable quarters), and compulsory sanitary conditions maintained there; then enforcing perfect cleanliness and punishing adulteration in city depots (where much of the cussedness gets into milk and much good out of it); inspecting food and quarters and facilities for handling and transportation—in short, if the authorities would model their requirements after the methods voluntarily pursued by the proprietors of modern dairies, of which nearly every city has examples near by, there would be less infant mortality and dyspepsia—perhaps, if we ignore Dr. Koch, less tuberculosis.

The subject of transmission of disease through milk has been so widely discussed that we shall not touch it here. Dr. Carter, previously quoted, who seems to have studied the situation carefully, suggests some regulations for combating the epidemics arising from improper methods of producing and marketing milk. One of the best, which endorses an established practice in the modern dairies referred to in the preceding paragraph, is this:

"That the methods of handling milk in bulk be abolished; that all milk used for food purposes, to be consumed raw, be bottled and sealed on the farm, and that the seal be not broken until it reaches the consumer, thus avoiding much exposure and any tampering or contamination after leaving the farm; also that the bottle be stamped with the day and the date, and the name of the shipper."

The doctor has already suggested proper arrangements for inspecting the dairies and cows where the milk was produced; and all through his article tacitly concedes the propriety, if not the absolute necessity, of restricting the production of milk to rural districts.

Leg and Body Wash.



When it comes to stiffness and soreness of muscles, tendons, etc., nothing equals

Tuttle's Elixir

for restoring normal conditions. Apply to the body as a mild sponge bath and put on light blanket. Sponge the legs and put on light bandages.

Used and Endorsed by Adams Express Company.

Tuttle's American Condition Powders

—A specific for impure blood and all diseases arising therefrom. TUTTLE'S FAMILY ELIXIR cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE.

Tuttle's Elixir Co., 88 Beverly St., Boston, Mass.

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Beware of so-called Elixirs—none compare with Tuttle's.

Avoid all blisters, they offer only temporary relief, if any.



PAGE

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In PAGE FENCE requires high tempered wire. PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

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—For Sale by—

A. O. RIX, Irvington, Alameda County, Cal.

ELECTRIC FOR STRENGTH
You are through with wagon worry forever when you buy one of our **HANDY WAGONS.** They carry 4000 lbs. and do it easily, and don't cost a fortune either. Write for the free catalogue. It tells all about this wagon and the famous Electric Wheels.
ELECTRIC WHEEL CO., BOX 10, QUINCY, ILLINOIS.

Cocoanut Oil Cake.

THE BEST FEED FOR STOCK, CHICKENS AND PIGS.

For sale in lots to suit by
EL DORADO LINSEED OIL WORKS CO.
208 California St., San Francisco, Cal.

SUBDIVISION OF THE FAMOUS LAGUNA DE TACHE GRANT,

Comprising over 60,000 Acres of Rich River Bottom Land with Water,

LOCATED IN FRESNO AND KINGS COUNTIES, Along the North Side of Kings River.

This land is adapted to CORN, ALFALFA, POTATOES, GARDEN VEGETABLES, ORCHARD or VINEYARD. It is an ideal locality for DAIRYING, STOCK and HOG RAISING.

We have sold nearly all of our First Subdivision. On the fifteen day of September we shall offer two New Subdivisions—over 10,000 acres of choice land. The prices are low, the terms very easy. For further particulars and descriptive folder, address

NARES & SAUNDERS, Managers,

LATON, FRESNO COUNTY, CAL.

See Article on the locality in this number of Pacific Rural Press.



PORTABLE HOUSES for Poultry.

Something unique. Designed and constructed from the suggestions of several experienced poultrymen.

Almost Vermin Proof.

Well built and easily handled by two men.

We can build them cheaper than you can.

Shipped knocked down.

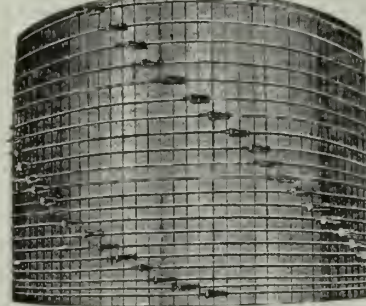
Send for Illustrated Circular and Price List.

BURNHAM-STANDEFORD CO.,

Washington St. bet. 1st and 2nd, OAKLAND, CAL.

OUR EXCELSIOR ADJUSTABLE ROUND-HOOP TANK

(Patented)

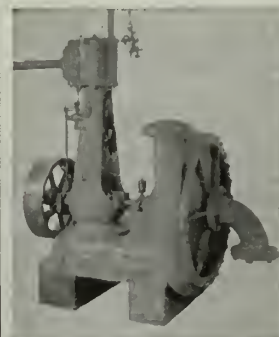


Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channels or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

The Excelsior Redwood Co.

SOLE MANUFACTURERS, Fourth and Channel Sts., SAN FRANCISCO.

C. A. HOOPER & CO., Agents, 204 FRONT STREET.....SAN FRANCISCO.



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for IRRIGATION, RECLAMATION and WATER WORKS.

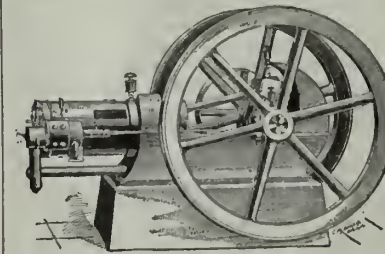
Capacity up to 100,000 gallons per minute.

They are made Horizontal and Vertical and Direct Connected to Steam or Electric Power. Our Pumps have given the highest efficiencies ever recorded.

IN USE ALL OVER THE PACIFIC STATES.

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The "OLDS" Gasoline Engine.

BYRON JACKSON MACHINE WORKS

201 North Main St., Los Angeles.

Economical, Durable and Simple. 1 TO 50 HORSE POWER.

SPECIAL 3 H. P. Gasoline Engine, \$150 ALSO

JACKSON

Centrifugal Pumps.

411 Market St. San Francisco.

Agriculture and Horticulture at the St. Louis World's Fair.

The contract for grading the sites of the Palaces of Agriculture and Horticulture at the World's Fair at St. Louis has been let. The work will require the handling of 252,000 cubic yards of earth, carrying it an average distance of 500 feet. The Agriculture building, according to revised plans, will be 600x1600 feet, covering an area of nearly a million square feet, or more than 22 acres. In this great building will be displayed the extensive exhibits of foods, dairy products, bees and bee products, farm machinery and the agricultural exhibits of the States and nations of the world. The location of the building is near the central part of the exposition grounds and its immense size, upon the elevated site which has been allotted to it, will make it the most prominent of the fifteen great exhibit palaces. The Palace of Horticulture will stand directly south of the Palace of Agriculture and will be 400x800 feet, having an area of 320,000 square feet, or 7½ acres. One room in this building 400 feet square will be devoted to fruits and fruit products, another room 200x200 to a conservatory with floral display, and still another room 200x200 feet to the accessories of horticulture, such as implements and appliances for the cultivation and handling of fruits and flowers. The elevation of these palaces is such as to afford opportunity for terraced gardens and other beautiful landscape effects, while the outdoor exhibits of agriculture and horticulture will be very extensive and interesting to both the general visitor and the practical grower or expert.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING AUGUST 26, 1902.

707,902.—SULKY HARROW—P. B. Christensen Spreckels, Cal.
707,552.—STOP AND LOCK—T. E. Clark, Visalia, Cal.
707,688.—CONVEYING APPARATUS—J. W. Foreman, Healdsburg, Cal.
707,913.—GUN CLEANER—G. H. Garrison, Bucoda, Wash.
707,926.—EXTRACTING METALS—Hill & Lane, Coles, Cal.
707,897.—GOVERNOR—C. A. Huffmaster, San Leandro, Cal.
707,770.—APPLE PARER—J. Jacob, Hen'ey, Cal.
707,784.—HAT SWEAT BAND—C. L. Johnson, Woodburn, Or.
707,776.—PIANO PEDAL—R. F. Lopspeich, Los Angeles, Cal.
707,613.—CONVEYER—W. L. McCabe, Seattle, Wash.
707,614.—CONVEYER—W. L. McCabe, Seattle, Wash.
707,796.—GAS GENERATOR—Newlin & Mathisen, King River, Cal.
707,625.—INK FOUNTAIN—N. Nilson, S. F.
707,982.—SEARCHLIGHT—H. H. Taylor, San Jose, Cal.
707,741.—THRILL COUPLING—T. F. Ware, Colfax, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

LAWN SPRINKLER.—No. 706,986. Aug. 12, 1902. P. Moderson, Fruitvale, Cal. This invention relates to improvements in lawn sprinklers. It consists of a nozzle having a spindle fixed axially in line with the discharge orifice and distributing wings turnable upon the spindle. These wings have certain of their members adapted to receive the impingement of the water on their outermost faces, and other members have their surfaces oppositely curved and alternating with the first mentioned members, the lower edges being depressed at a distance from the hub of the wings so that a passage is formed for the impingement of the water which is thus directed upon the innermost of the wing surfaces.

PNEUMATIC MALTING KILN.—No. 706,716. Aug. 12, 1902. Bernard Berg, San Francisco, Cal. The object of this invention is to furnish an apparatus in which the air is thoroughly heated and sterilized and by which it is distributed equally through the mass of material to be treated. The heater or furnace has flues carrying the products of combustion separate from the air passages and arranged serially, decreasing in diameter and increasing in number so that the heating area of the flues is augmented. Drums are revolvable in heating chambers with internal cylinders having longitudinal partitions, and means for admitting the material from the drum of one chamber to that of a succeeding chamber while controlled air currents are introduced through the chambers and drums.

POSTAL BOX AND SIGNAL.—No. 707,196. August 19, 1902. F. C. Bates of San Jose, Cal. Assigned to Bates-Hawley Postal Box Signals Co., a corporation, of same place. The object of this invention is

to provide a signal device attached to postal boxes and operated by the opening thereof so that the signal is exposed and indicates to the proper person that there is something in the box for removal, and to drop the signal after the contents have been removed. The box is so constructed as to prevent the entrance of dampness from storms, and the doors are so disposed that the largest packages may be introduced or removed and the box fully exposed for inspection.

NEEDLE THREADER.—No. 707,191. August 19, 1902. O. A. Aicardi, San Francisco, Cal. This invention provides a mechanical means for threading needles of any character. It consists of a support or stand, a horizontal guide, a threader reciprocable along the guide and a needle holder in the path of the threader, with means by which the needle is always made to present its eye to the threader and to be engaged thereby. Means are provided for adjustment and for severing the thread.

APPLE PARER.—No. 707,700. August 26, 1902. Jehu Jacobs, Henley, Cal. This invention is designed to provide an apple parer, corer and slicer. It consists of a turntable; means for holding an apple or other fruit in proper relation to a paring knife carried upon the turntable by means of a rotatable or slidable shaft; a second shaft mounted with relation to the first has a worm upon it, and a lever arm by which the knife is periodically held out of contact with the worm so that when released it may be advanced upon the worm, and means are provided for retracting the first shaft and knife at the completion of the slicing and coring operation.

Children are in danger in our fierce summers, when cholera morbus and other bowel troubles are rampant. Save your little ones by giving them Perry Davis' Painkiller. Plain directions will be found on each bottle.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS.—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke, 30 Montgomery St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs. Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

A. J. C. C. JERSEYS. Service bulls of noted strains. Joseph Mailliard, San Geronimo, Marin Co., Cal.

9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS.—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER Saxe & Son, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS.—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

SWINE.

SUTTON BROS., Lodi, Cal. For Sale. 1 Registered Poland-China Boar and 2 Glts, 5 months old.

POLAND CHINAS.—Call and see our show herd at State Fair. Bred sows for sale. S. P. Lindgren & Sons, Kingsburg, Cal.

BERKSHIRE, POLAND-CHINA & DUDOC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

J. L. BOURLAND, Bishop, Inyo Co., Cal. Breeder of choice Thoroughbred Duroc Hogs. Five sows of unrelated families. Breeding stock for sale.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

ASHLEY BROS., Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and Importer of South Down Sheep.

SHROPSHIRE RAMS. C. A. Stowe, Stockton.

POULTRY.

WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

MEAT MEAL.—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

BRONZE TURKEYS. Ed. Hart, Clements, Cal.

BREEDERS' SUPPLIES.

DON'T STOP NOW. My system of feeding enables you to successfully RAISE CHICKS ALL YEAR ROUND. Write to-day for particulars. Geo. H. Croley, 508 Sacramento St., San Francisco, Cal. Mention Pacific Rural Press.

OAKLAND POULTRY YARDS, Breeders of all the Leading Varieties of Fowls. 1817 Castro St., Oakland, Cal. Manufacturers of Pacific Incubator and Brooder. Send for Catalogue.



Eames Tricycle Co.,

Patentees and Manufacturers of improved designs of Tricycles, Tricycle Chairs for Invalids, and various models of rolling Chairs. Chairs sold, rented and exchanged.

Illustrated Catalogue mailed on application.

EAMES TRICYCLE CO.,
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THE NEW CROP

of pigs is coming on in good shape and we will soon be able to ship March, April and May litters whose sires and dams carry the blood of the most noted families in this country and England. We can furnish both BERKSHIRES and POLAND-CHINAS, with a large number to select from. Write for what you want and we believe we can please you.

SESSIONS & CO.,
Lynwood Dairy and Stock Farm,
City Office, 117 East 23rd St., LOS ANGELES, CAL.

MIDLAND FEED. THE ONLY BALANCED RATION FOR POULTRY IN THE WORLD.

TEN BRANDS—Each for a specific purpose. Each one complete in itself—NO ACCESSORIES. Intelligent Feeding of Poultry always returns a profit. Improper feeding does not. It costs no more to feed right than wrong. The nutritive ration must be balanced to meet specific requirements. Our booklet, "The Science of Poultry Feeding," tells you all about it. We will also send you, on request, our booklet "Poultry Fattening Perfected," which describes our new Poultry Crumming Machine and method of use; also trough feeding, and our special brand of Grenadier Meal; the only Perfect Feed on earth for this purpose sold under a specific guarantee. Write for them at once and get posted. THE PETALUMA INCUBATOR CO., Pacific Coast Agents, PETALUMA, CAL.

ASK YOUR NEAREST DEALER FOR OUR POULTRY FOODS:

Emery's Beef, Blood and Bone,
Emery's Pure Meat Meal.

VALUABLE INFORMATION IN REPLY TO A POSTAL.

N. OHLANDT & CO., Indiana and 24th Sts., San Francisco.

HUMBOLDT STOCK FARM,

JOSEPH MARZEN, PROPRIETOR.
Breeder of SHORTHORN AND HEREFORD CATTLE.
Young Stock for Sale. LOVELOCK, NEVADA.

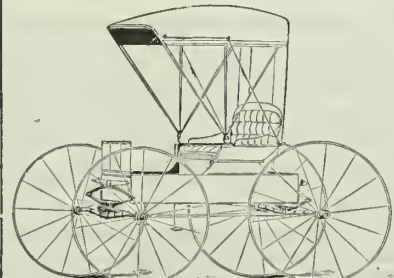
HOLSTEIN CATTLE.

SLEEPY HOLLOW RANCH, SAN ANSELMO, MARIN CO., CAL.
ALL THE LEADING FAMILIES OF THE BREED.
Every Sire directly imported from Herds of the Greatest Eastern Breeders.
Large Number of Officially Tested Cows. Bull Calves from Great Producing Dams.
Correspondence and personal inspection invited. R. M. HOTALING, 431 Jackson St., San Francisco.

Protect your calves against Black Leg with

BLACK-LEG=INE

PASTEUR VACCINE CO., CHICAGO, NEW YORK, FT. WORTH, SAN FRANCISCO.



\$85.00 Buys this Buggy at RETAIL.

Guaranteed for 2 years. Everything that goes into it is of the best.

DESCRIPTION.—Body, 24 inch x 54-inch, black; Wheels, Sarven patent and warranted XX grade; Top, leather quarter, 4-bow wrought iron shifting rail, all wool lined. Trimming, green leather, Spring Cushion, Spring Back, ends of seat nicely padded, Carpet, Storm Apron, etc.

ORDER direct from us this week and you can purchase one for

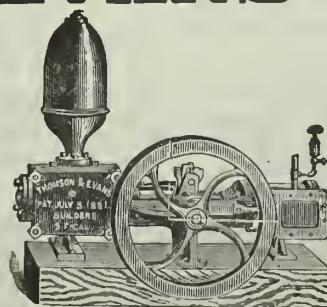
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Steam Pumps.

DEEP WELL
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MARINE ENGINES.

SHIP and STEAMBOAT WORK.

PIPE CUTTING, Etc.

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W. & P. ROOFING.

We would like to send you sample of our W. & P. Roofing, and to tell you its advantages over all others.

PACIFIC REFINING & ROOFING CO.

113 New Montgomery St., SAN FRANCISCO.

ON THE ROAD.

Sacramento Valley and Its Interests.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

THE WOODLAND FAIR.—From an artistic standpoint in the pavilion and a racing standpoint in the field, this was a decided success. The show of stock was not bad, either. Having competent officers, everything ran smoothly.

There were considerably over 200 entries in the stock department, including poultry. In the main they were: In thoroughbred cattle—Jersey 2, Durham 28, Holstein 4, graded 15, of herds 3, for sweepstakes 8; in horses—standard bred 8, Coach 9, Norman 2, graded 9, all work 3, draft 1, roadsters 4, roadster teams to harness 2, carriage 1, colts 4, ponies 1, for sweepstakes 2, jacks 2; in sheep—Southdown 8, Shropshire 4; swine—Berkshire 6, Poland-China 4; besides the pigeons and poultry, which were on exhibition in the annex to the pavilion; and in the racing department, 101 entries of ninety horses by sixty-nine enterers, announced in a special printed list.

The principal exhibitors were: In cattle—A. F. Steiner, Jersey and graded; Bullard & Co. and H. P. Eckle Jr., both, Durham and grade; W. B. Gibson, Durham; Sam Tutt and Claude Harlan, each, grade; L. G. Rhodes, Holstein herd—bull, cow and calf. In horses—Mrs. E. W. Callendine, of Sacramento, in the standard, grade, coach, all work, road and colt classes; W. C. Crane, of Knight's Landing, in standard; William Murray, in standard; Wm. Ostie, in grade and coach; W. Y. Browning, in grade; F. C. Grimes, of Knight's Landing, in grade; Andrew Martin, in grade, all work, Norman, draft and colt classes; B. B. Montgomery, in coach and road; Mrs. H. P. Eckle, in road; Thos. Waite of Perkins, and Joseph Kerr, each, in roadster class; T. B. Gibson, in carriage; W. B. Gibson, special colt; A. B. Rodman and Fred Mast, each, in jack. In sheep—Thos. Waite, of Perkins, Southdowns; W. B. Gibson, Shropshires—each a fine lot. In hogs—W. B. Gibson, Poland-China; Thos. Waite, of Perkins, Berkshires.

One of the most satisfactory features of the races was the competent management of them. Without fuss or feathers, it did business straightforwardly and honestly. The Fair Association formerly imported professional starters, but last year and this the work in that position of A. C. Stevens, a farmer near Woodland, has been unusually satisfactory to every one. The work of the president, J. Keith Jr., secretary C. F. Thomas, and the entry clerks E. T. Clowe and Mrs. A. E. Baker, this year, was also equally satisfactory to all.

The grand stand has excellent acoustic qualities, which were extensively utilized by a cornet band from Sacramento.

An interesting feature of the fair for the grand stand spectators was the high diving of the black pony "Cash." It was real and interesting.

On account of the artistic excellence and wealth of good music, and some other peculiarities, the evenings at the pavilion partook of the nature of social functions more than anything else. The pavilion itself (Armory Hall), with its decorations and artistically arranged displays, below on the floor, was literally a "dream of beauty."

Beneath the gallery, which runs around three sides of the room, the bare walls were hidden with well-chosen tapestries. The mercantile exhibits, usually so bare, were works of art ranged round the room as a border to the other displays. Without obtrusiveness of their purpose, they contributed to the happiness of all present. Down the middle of one-half the length of the room were four extensive tables, clothed in white, tastefully decorated in green with cereals and open-leaved branches of fruit trees, and loaded with an excellent display of grapes, apples, plums, some peaches, and other green fruits, with dried fruits, nuts, etc., interspersed, in all of which the grapes

and apples were specially prominent in quantity and quality. There were four large pyramid stands of canned fruit and jelly displays, and one magnificent table show of vegetables and cereals made by our Italian fellow citizens. In upper rooms, nearly on a level with the gallery around the main hall, were the displays of fancy work, while just outside the hall, in the open square, surrounded by a high, close fence for the purpose, were the poultry displays, the "country store"—which did a rushing business and caused much satisfaction and amusement—and several side shows of a professional and harmless character, the "Statue Turning to Life," theater, etc. The full list of exhibitors, except those in a mercantile and amusement way, is as follows:

POULTRY.

Thomas Waite, Perkins—Plymouth Rock, Brown Leghorn, Black Minorcas. Mrs. F. A. Kaufman—White Minorcas. Mrs. T. E. Roberts—Plymouth Rock. Mrs. R. S. Spaulding—Black Minorcas, Bantam.

B. G. Kingsley—Black Minorcas. Mrs. E. Gallup—White Leghorn, Brown Leghorn, Bantams. Wm. Provost—Buff Cochins, Bantam. Mrs. Byron Ball—Buff Cochins, White Bantam, Buff Bantam, Langshan. Wm. Provost—Pigeons. Wm. Provost Jr.—Pigeons.

FRUITS AND VEGETABLES.

Joe Benasini—General display of vegetables.

E. J. Tharp—Cut broom corn. M. E. Church Auxiliary—General display plants and flowers, flower seed, garden seed, sweet and yellow corn, pea beans, hops, broom corn, Egyptian corn, green tobacco.

A. M. Eaton—Apples. E. J. Clanton—General exhibit of green fruit (peaches, quinces, figs, pomegranates), general exhibit of grapes (table, shipping; raisin, wine, seedless), Muscat raisins, dried fruits (apricots, figs, pears), nuts (almonds and walnuts).

C. T. Bidwell—Prunes, olives, pomegranates, general exhibit green grapes (table, shipping, raisin, wine, seedless), raisins (Muscat, Seedless Sultan, Thompson's Seedless).

Blowers & Son—Nine varieties olives, five varieties oranges, six varieties pears, five varieties almonds, three varieties prunes, two varieties plums, three varieties figs, Thompson's Seedless grapes, dried fruits (raisins, apricots, pears), two varieties walnuts.

Mrs. L. D. Stephens—Egyptian corn, wine grapes.

E. Gallup—General display green fruit, general display grapes (table, shipping, raisin, seedless).

Mrs. Andy Jackson—Oranges. M. Raffaetta—Olive oil, growing tobacco.

Some of the features notable for their excellence or newness were: The pigeon display by W. H. Provost, the painter, and the Plymouth Rock poultry by Mrs. T. E. Roberts; the country store; the delightful furniture made from palm branches by Mr. Dungan, father of Editor J. H. Dungan of the Woodland Mail; the pencil drawings, the lace, and the freshness of design in the needle art work; the display of apples, grapes and peaches, not entered for a prize, by H. H. Smith of Brooks, Capay valley; the chair of Flaming Tokay grapes by Mrs. E. Gallup, which was a tasty feature of the horticultural display; the very complete and well handled display of Blowers & Son. There were displays of printing by all the offices. The prominent place given to grapes is well justified by Yolo's place next to the head among the counties in both table and raisin grapes, and only fifth in wine grape acreage. The ladies of the W. C. T. U. sold light refreshments of a quality to be long and pleasantly remembered, in an attractive, airy, green-trimmed white booth. The excellent artistic work in the pavilion is credited by every one to Mr. T. S. Spaulding of Woodland.

While Yolo county is still mostly devoted to grain raising, its industrial character is changing rapidly toward alfalfa, dairy, stock and fruit raising.

KNIGHTSEN.—This town, on the Santa Fe, is quite a shipping point for the section where the almond and grain-raising upland of Contra Costa county and the tule lands meet. In July of this year there were shipped from that point sixty-three carloads of grain, three of dried apricots and one of wool,

besides a ton or more of milk a day, which last will be increased by nature later on in the year. In the proper season there is shipped one-half a car a day of asparagus for some time. Between Knightsen and Brentwood, for the larger and latter part of the way, the soil is a most magnificent specimen of dark upland alluvial, washed down from the mountains around about and including Mt. Diablo, mainly by Marsh creek, it is claimed, which now meanders through the plain with unusual narrowness and depth. The grain farming methods in this section between the towns are remarkably up to the ideal, and this section has the local reputation of being one of the places where the farmers are still making money out of grain. The almond raisers are hardly as fortunate, however, though they are no doubt doing well. The cause of their comparative woe is that in the early days of planting their orchards they were led into planting too largely of the I. X. L., which has proved a shy bearer and generally unsatisfactory, and a man who was expert in grafting almond orchards could undoubtedly find good business there for some time. Some of the upland farmers near Knightsen are disposed to let go of a portion of their holdings at a reasonable price, or what seems so to them.

THE PEOPLE'S DITCH SYSTEM.—This system, lying mostly north by northeast and northwest from Hanford, is being improved by the putting in of a new weir in Kings river, from which it takes its water, which will cost probably \$20,000. The plans and specifications were drawn by I. Teilman, C. E., of San Francisco, who is superintending the construction, which is in the immediate charge of Mr. J. H. Dawson, with a large corps of men. The foundation of the weir will be of redwood, resting on a row of sheet piling at each end with rows of piling 2 feet apart between, driven 20 feet into sand below the bed of the river. The weir, when finished, is calculated to hold the water up about 6 feet above low water mark, and will fill the ditch the year round.

FRUIT NEWS.—(Sept. 3): Fresno packing houses have been working full handed on peaches and figs since Aug. 25.

The Guggenheim Company will move into their new house there about the 20th.

Hundreds of Chinese and Japanese have been hauled out to the vineyards for the grape harvest. H. E. B.

(Traver, Sept. 3): The grape picking has just commenced here. The crop seems to be more than ordinarily abundant and the quality good between this place and Hanford, while the weather is all that might be reasonably expected, the temperature for the last few days having been slightly higher than for the past two weeks and promises fair for raisin-curing in the sun; but there seems to be a tendency on the part of raisin growers to contract their grapes to the wineries rather than put them on the trays, probably owing to the fear of unsatisfactory prices for the latter. W. C. L.

Corn in Kansas.

From the Arizona Lyre.

The horrible news comes from Kansas that a boy climbed a corn stalk to see how the corn was getting along, and now the stalk is growing up faster than the boy can climb down. The boy is out of sight. Three men have undertaken to cut down the stalk with axes and save the boy from starvation, but it grows so fast that they can't hack twice at the same place. The boy is living on nothing but raw corn, and has already thrown down over four bushels of cobs.

Grim figures prove the death rate among children in summer, an anxious time for mothers because bowel troubles are rampant. What a mercy it is that we have Perry Davis' Painkiller to save our little ones.

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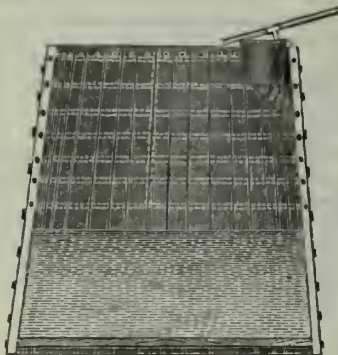
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The Eames Motorette.

Dairy Convention.

The accompanying illustration shows a simple and practical run-about vehicle weighing less than 100 pounds, adapted to carry a person weighing 200 pounds, at from 5 to 10 miles per hour. This motorette is operated by a gasoline engine of 1½ H. P., driving a ball-bearing counter-shaft that in turn drives

The ninth annual convention of the California Dairy Association will be held at Sacramento on September 16 and 17, second week of the State Fair. The programme, subject to revision by programme committee, is as follows:

Tuesday, September 16, 10 A. M.—Organization of convention; address of



The Eames Motorette.

the two large wheels of the machine. The transmission is all by means of belts, making it cleanly, noiseless and smooth running. The frame is steel tubing, and carries a nicely upholstered seat with a spring steel back, the seat resting on four coil springs, making a very easy riding vehicle.

The machine is fitted with a hand-propelling device, but with free running sprockets, so that the handles remain stationary except when used by the hands.

It is started from the seat by giving the handles a turn or two, then opening the throttle.

The guiding is done from the lever at the left side of the seat, and with this same lever is connected the brake, so that both can be operated by the one hand. The guiding wheel is also fitted with springs holding it in a straightforward position, so that it will run straight ahead unless turned by the lever, thus doing away with liability of accident through disarrangement of the steering gear.

The capacity of the gasoline tank is ½ gallon, which will run the machine from 30 to 35 miles; cost 10 cents, or ½ of a cent per mile.

The electrical ignition is from four cells of dry battery, which will last from 500 to 1000 miles; cost 50 cents each, or \$2 per set.

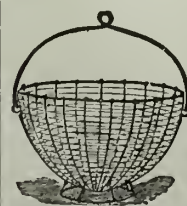
The Eames Tricycle Co., 2018 Market street, San Francisco, are the builders, and are now designing a two-seated vehicle on similar lines, adding about 50 pounds to the weight, and with higher rate of speed.

president, Judge Peter S. Shields, Sacramento; "Care of Milk for City Supply," Dr. W. N. Sherman, Fresno. Afternoon Session—"Feeding of the Dairy Cow," Thos. S. Stephenson, Courtland; "Lessons from Pan-American Tests," P. H. Davis, San Anselmo; "Breeding Cattle for Dairying," Leroy Anderson, Berkeley; "Care of Farm Separators," H. F. Lyon, Alameda.

Wednesday, September 17, 10 A. M.—"Manufacture of Cheese in California," E. H. Hageman, Pescadero; "Modern Dairy Appliances," C. E. Hill, San Francisco; "Creamery Management," A. B. Evans, Fresno. Afternoon Session—"Scientific Butter Making," F. H. Arnsburger, Stockton; "Care of Milk for Manufacturing," Geo. G. Knox, Sacramento; report of scoring in butter contest at State Fair.

The second day's session, Wednesday, will interest creamery men especially, and that afternoon will be devoted to a discussion of the science of butter making, and every one present will be invited to take part.

PETER J. SHIELDS, President.
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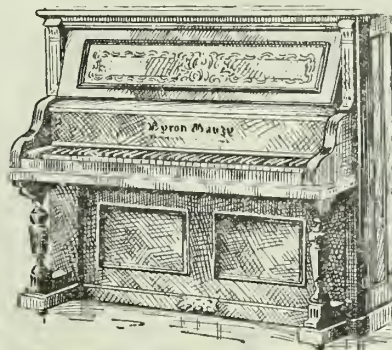
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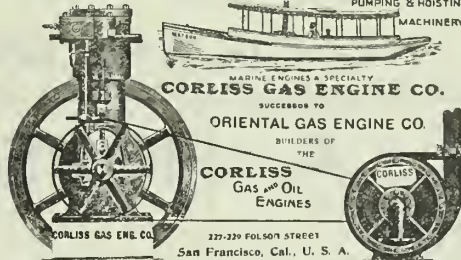
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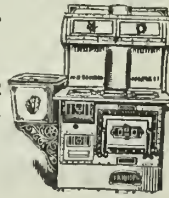
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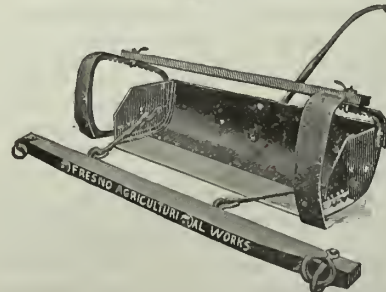


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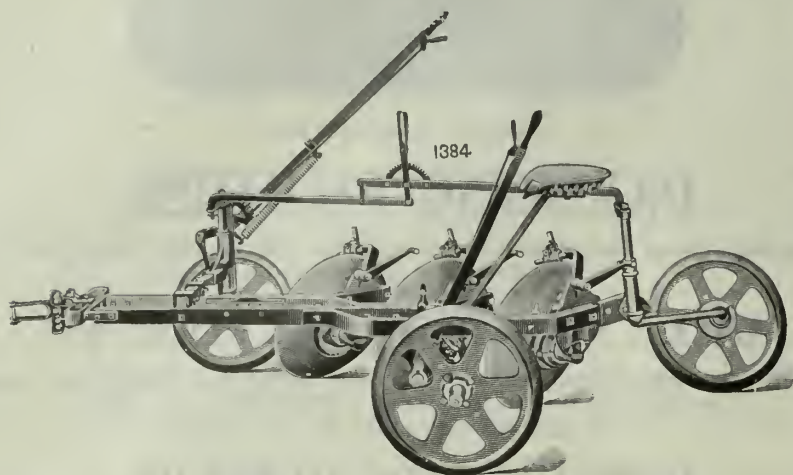
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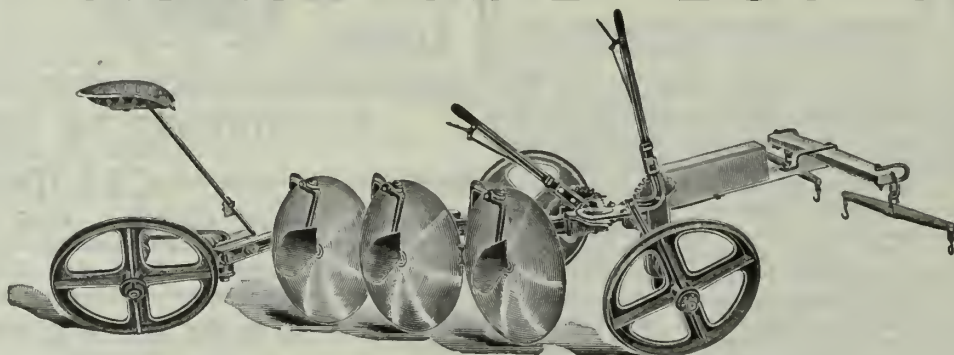
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Vol. LXIV. No. 12.

SAN FRANCISCO, SATURDAY, SEPTEMBER 20, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

San Joaquin Development.

We had the pleasure last week of personal view of many phases of development in the San Joaquin valley while on the way for our annual visit to southern California. Though only a few months had elapsed since our previous run through the San Joaquin valley counties, we were surprised and delighted with the new marks of advancement which were visible at many points. There is much building going on in the towns; new shops, factories and warehouses are common, and cottage residences of the light construction and tasteful design which befit the salubrious climate are everywhere multiplying. At most all cities and villages of the valley there is to be seen a new fringe of such structures around the older portions, and soon the growth of street and garden trees will cover the work of carpenter and painter and draw the new circle of homes beneath the canopy of shade for which the valley towns are noted.

Another change which is hardly less apparent to one who has long looked upon the valley landscape is the increase in the acreage of valley verdure other than that secured by tree growth. Evidently the vine acreage is increasing again in the parts where the grape is popular and this adds to verdure; but the widest and most welcome addition, to our eye, is the onward and outward march of the alfalfa fields. Pushing backward the yellows of the autumn landscape, wherever the well-watered area is extended by the ample contribution of ditch or pumping plant, the rich green of alfalfa is giving a lawn-like aspect to the valley plains. This is very beautiful in the abstract, but there is added significance to it when one thinks that this change in the landscape is a sign of the growth of industries for which the valleys have demonstrated exceptional adaptations. One gets a clue to this by the sight of the herds of horn stock, the bands of horses and mules and swine which dot the new sweeps of green. Over lands of which at this time of the year, under the old regime, jack-rabbits or stubble-feeding sheep were the only tenants, there are now seen large numbers of selected live-stock well fed and thrifty upon the new carpet of succulent vegetation.

But all our readers cannot see the tokens of valley development as we are privileged to see them, and a suggestive picture must convey the lesson to many of them. Such is the view on this page of the stock ex-



The Horse Show at Hanford Fair in Kings County.

hibit on the fair grounds at Hanford in Kings county. Next week there will be another display on the same grounds, and possibly even better show will be made for the sight of all who can visit this year's fair. But the picture is very suggestive. It not only shows that they have good stock in this part of the valley, but it argues clearly the local adaptation for the extension of this breeding interest which is now yielding such profitable results. The Hanford district is a grand stretch of lands of exceptional fertility with untold supplies of water either flowing in ditches or near enough to the surface for the cheapest pumping; lands suitable for the production of grains, fruits and forage plants, and welcoming a system of mixed farming which the long growing season and the mild winter temperature render probably without a superior in the temperate zone.

It would take a whole gallery of pictures to show in variety the features of the animal industry which are now developing so rapidly on the lands which are being brought under the new farming policies in the San Joaquin valley. Everywhere are to be seen

bands of dairy and beef animals of superior quality, swine are abundant and still less than the market demands, and the only thing we missed, and which we think should be supplied, is the fine sheep for the production of high-grade lamb and mutton. Attending the extension of the growth of fine stock on the farm plan rather than the range plan, is the erection of farm buildings everywhere; good barns and sheds and corrals, and at intervals the creameries and skimming stations which are becoming new centers of activity in the old kingdoms of silence and solitude.

Another picture on this page shows the apricot harvest in the Hanford region and illustrates the sheet method of shaking and gathering, which is quite common in handling this fruit for drying. One sees in the San Joaquin at present many signs of the growth and development of the fruit interest. New packing houses and canning establishments, considerable areas of new grape vines which the better markets for the products of that fruit are now justifying, and many plantations of young fruit trees as well. There may not be such great ventures in speculative planting, perhaps, and it is just as well that there are not, but moderate planting of wisely selected fruits are certainly good propositions. They diversify the agriculture of the region, they give scope for the employment of home labor, and when well managed will add much to the income of the new home-makers. There have been serious disappointments in fruit values this year it is true, but these are due to conditions which occasionally will arise. There has been for several years for most deciduous fruits a quick demand and full prices. This year there is a lull and the inaction in some lines will but prepare the way for future activity. There are constantly appearing new indications that California has an exceptionally good line in the production and preservation of deciduous fruits, and that such investments are safer and surer of reward than in other parts of the country. We believe that the outlook for wise extension of our fruit area was never better, but it is necessary that only the best suited lands and fruits should be brought together. Wildcat planting never has paid except in the way of re-sales to tenderfeet, and this source of revenue should be resolutely abandoned. For the fruits which are now used in largest quantities the best lands in San Joaquin, deep, rich and well supplied with irrigation when necessary, have no superior in the State.



The Apricot Harvest in the Hanford District of the San Joaquin.

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E. J. WICKSON. Horticultural Editor

San Francisco, September 20, 1902.

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The Week.

The advance of the season and the maturing of the later fruit and field crops are emphasizing the labor shortage and some losses are being incurred. The necessity for handling at home much fruit which has usually gone to canners or shippers is also creating an unusual strain on the available labor supply. There is no immediate help beyond that afforded by the town people who can give their time to it and secure the liberal rates which the growers are paying for handling everything they can see a cent of margin in. The railways promise a host of new people this fall, but they will come too late to be of much assistance. Our growers are having a strenuous time of it this fall and their rewards are not liberal. The fairs show that they are occupied and farmers' institutes are in some cases laid over until a season of more leisure. How the political meetings will thrive remains to be seen, but it is indeed a busy time when the political rally or the circus has to go with empty benches. There are some things a man must do for his country and his children.

Wheat has been on the up grade, scoring during the week a quotable advance on spot offerings of 25@50 cents per ton, and still more on futures. There have been seven grain clearances since last issue, including two straight cargoes of wheat, three of wheat and barley, and one of wheat and merchandise to Europe. There was one clearance of Chevalier barley to Australia—57,016 centals—at a clearance valuation of \$76,087. Flour shipments footed up over 30,000 barrels, the larger portion going to Asia. Combined shipments of cereals and flour for the week show a total valuation of over half a million dollars. Barley is 50 cents to \$1 per ton higher and market strong at the advance. Oats have gone up about 50 cents per ton in sympathy with barley. Other cereals are without marked change, but in the main firm. Bean market is lower for Large Whites, Bayos and Blackeyes; new crop Whites are moving eastward at \$2.20 in carload lots. Millstuffs market remains strong. Rolled Barley is higher. Hay is firmer; dealers have most of the crop and have marked up stable hay about \$1 per ton; clover and alfalfa are unchanged. Nothing new in market for beef and mutton. Hogs are arriving more freely, but are no lower, being relatively cheaper here than East. Butter is going at a wide range, with supplies ample of the best grades and

superabundant of other kinds. Cheese is quiet at firmer figures. Select eggs are bringing fancy prices. Laying hens are money makers just now. Held eggs are plentiful and cheap. Potatoes and onions are moving Eastward freely at steady prices. Fresh fruits show decreased receipts and tendency is to better figures. Dried fruits are without special change, although high grades tend against buyers. A shipment of apricots was made per steamer to Europe, mainly of France. Prices for new crop walnuts have been fixed at 9½@10c f. o. b. Los Angeles for standard and softshell respectively. Hops continue lifeless, being held above views of shippers. Local wool market is firm at unchanged quotations; London market is higher.

We are glad to note that the development work of the California Promotion Committee is proceeding in a direction which is decidedly promising of help to new comers in a way which has hitherto not been adequately provided for. The intending settler gets quite as much general information, both verbal and pictorial, as he can use, and it contributes to his knowledge, but when he begins to ask specific questions about whether he can do this or that, where he can do it and how he should begin at it, he is apt to strike a hot air blast which often blows him very wide of his true course. It is, perhaps, too much to expect that general promoters should carry the details of practical work in various lines of agriculture, and if they would only disclaim such knowledge no harm would be done; but they conceive that to confess ignorance of details would be to impeach themselves, and so they deal out language through their hats which brings to the hearer many disappointments. The Promotion Committee announces that it will arrange for proper tabulation of inquiries and indexing of information about resources, industries, etc., and this will be of much value to new comers if discriminating effort is made to secure knowledge true in general features and at the same time in sufficient detail as to ways and means to be satisfactory to inquirers. If this undertaking is entrusted to some one who can reach such sources of information, and has understanding of the matters which will enable him to judge expertly of the accuracy and pertinency of the facts used in his dispensing of advice on practical affairs, much real service will be rendered toward satisfactorily placing the people whom the general exaltation of California opportunities attracts.

One mark of the appreciation of this need among those who are now working intelligently and zealously for the greater peopling of the State is found in some remarks made at a recent meeting in this city by Passenger Traffic Manager E. A. McCormick of the Southern Pacific. He is reported to have said:

What we need now is some honestly conducted system of taking care of these people when they come here and providing them with the kind of farms and homes that they want. It is up to the California Promotion Committee to take this matter in hand without delay and look after the wants of every Eastern visitor who comes into the State with an inquiring look on his face. If an Eastern farmer comes here with the idea that he wants to raise vines, I say let us place him in the way of getting land that will grow vines. If he wants to grow apples, let us show him where the best apple lands are. If we look after these matters earnestly and honestly we will get all of these thousands of people who are coming here not only to settle here, but to get their friends to come as well.

This is a true statement. Most of the disappointment which has been experienced is due to misplacing people on lands not suited to the branches of agriculture which they desired to follow, also to misleading them with visions of unreasonable returns for their investments. The ordinary home seeker would be content with what he can reasonably expect to realize, and that is good enough, and can be secured with reasonable surety if he is wisely advised at the outset.

Prof. D. T. Fowler, who went abroad to attend the great Rochdale Co-operators' Convention in England, returned last week in good shape, having profited greatly by his opportunity for observation. He will proceed with Farmers' Institutes as rapidly as the harvest conditions and political engrossment of the people will admit.

Have We Slandered Them?

The prune combine, known as the California Cured Fruit Association, is making full effort to render its memory hateful. It seems to be disposed to collect money for services which it never rendered and to enforce claims which, as we understand it, it had specifically renounced. Bills are being sent out by which thousands of growers are placed in the position of endeavoring to extort from each other penalties for refusing to entrust their fruit to an association which they all had practically repudiated. Apparently little is left of the Association but the officers, and they seem to be doing all they can to punish people for having honored and rewarded them. The whole thing is in a bad state.—PACIFIC RURAL PRESS, Aug. 23.

The above came to us pinned to a copy of the agreement which prune growers signed on entering the Cured Fruit Association, in which certain clauses were marked, and on the blank space below the following note:

To THE EDITOR:—Will you kindly read Articles 1 and 7 of this contract, relating to the 2% which you have written about in your paper?

In collecting this 2% I am only doing my duty, and it appears to me no reputable paper should state so many untruths as appear in every line of your article. Nearly all of our growers are paying this 2% charge on the amount of money received for their prunes in 1901, sold outside the Association. They acknowledge the justness of this charge and pay it willingly.

I send you this for your information, and would mildly suggest that you know what you are writing about before you proceed to slander the officers of this Association, or impute to them dishonest motives.

F. N. WOODS,

President California Cured Fruit Association.
San Jose, Sept. 6, 1902.

The PACIFIC RURAL PRESS is somewhat shocked that at its advanced age and after its long life of staidness and propriety it should be charged with lying in every line and of slandering people who are only doing their duty. We have read the passages marked by Mr. Woods and find they agree perfectly with the memory of the facts upon which the paragraph to which he objects was written. We admit that signers of the agreement did transfer a 2% interest in the crop of 1901 to the Association, and that if they sold to others they could only sell their own interest, which would be 98% in each case. We had no idea of denying this technical and literal obligation which signers of that contract assumed.

The whole affair, however, is one in which "the letter killeth," as the Scriptures say. What are the officers of this Cured Fruit Association as it now stands and what do they represent? They cannot surely be merely representatives of themselves. If, then, they are representing those who signed that agreement, they are putting all those people in the position of endeavoring to extort money from each other, and for what purpose? We understood that the directors had given assurance that they would not place people in such a position, but we may have been mistaken about that, and we only alluded to it as our understanding of it, which is not a very acute form of lying. Perhaps some reader can give us more definite knowledge of this phase of the matter.

We take it that there is no lying in the statement that the members had practically repudiated the Association. We have no space to analyze the course of management by which this repudiation was incurred; there can be no doubt about the fact. We are somewhat surprised at Mr. Woods' statement that nearly all the growers are willingly paying in that 2% charge. We have not heard from many members; but from what some have told us they had written to Mr. Woods on this subject, we supposed that he would have to keep his letter files in cold storage to prevent their taking fire. However, we do not wish to vex Mr. Woods with any more lying and therefore refrain from assertions on this point. There is, however, one thing we cannot understand, and that is, if people are tumbling over each other to pay in this justly earned money, they do not take interest enough to vote, so that the Association can proceed better with its beneficent work. American people are, as a rule, much more eager to vote than to pay out money, but prune growers are evidently peculiar people.

Has it ever occurred to Mr. Woods that these willing people are paying in this money because the officers of the Association have a lot of their property

and they fear that, if they do not pay, these officers will (in accordance with another clause of the agreement which Mr. Woods did not mark) proceed against them in the courts and recover "all costs and expenses, including counsel fees, which it shall have incurred in the premises?" In other words, are they not afraid that they will lose even the small residuum of value which they hope to secure from the sale of the crop of 1900 which they entrusted to the Association? If this is Mr. Woods' construction of the term "willingly," we must still contend that the officers are "doing all they can to punish the people who have honored and rewarded them."

We are sorry this diplomatic language should strike Mr. Woods as slander and imputation of dishonest motives. Perhaps the words used by Mr. A. B. Fletcher, a director of this Association, at a mass meeting of prune growers in San Jose Sept. 7, will strike him as less slanderous. According to the Mercury report, Mr. Fletcher said on that occasion:

I would like to be out of the Cured Fruit Association as a director. I would like to be off that committee also. The growers think they have been so badly robbed by the Cured Fruit Association that they won't do anything. I don't think it is possible to get enough money to buy the warehouse. At all events, I do not want to be a director again.

We said the whole thing is in a bad state and explanations do not seem to improve it. Our notion is that as "the letter killeth, the spirit maketh alive." We believe if the directors would take the chance of being impeached for disregarding the letter of their agreement (which is practically dead) and proceed to give the people back all the money they can; stop paying employes to persecute the people; compromise claims and close up before all the assets are frittered away in killing time, the officers will save their self-respect and start in a fair race to retrieve their business reputations. We can not see in the paragraph at the beginning any imputation of dishonest motives. The matter involved seems rather one of business decency and humane spirit.

QUERIES AND REPLIES.

Pruning Apricots.

TO THE EDITOR:—Please inform me through your paper when, in this locality, apricot trees should be pruned, to settle dispute?—G. S. B., Salinas.

The time of pruning of apricots depends upon the age of the tree and the local climate. In the cooler parts of the State, where growth is moderate, or even in the hotter parts of the State, if moisture is scant and growth reduced by this lack, young apricots should be pruned after the leaves have fallen, for this process promotes wood growth. Where heat and moisture are ample and growth riotous, over growth can be checked and good form quickly secured by summer pruning, followed by thinning out of shoots after the leaves fall, so that the tree may not become too dense or bushy. In your district we should rely upon winter pruning of young trees. Bearing apricot trees every where can be best pruned just after the fruit is gathered. This checks excessive wood growth, which is not desirable in a bearing tree, and it promotes bearing, which, with some varieties, is very desirable. But pruning just after fruit gathering is most desirable in parts of the State where growth is greatest, and in the coast region some growers rely upon winter pruning for both young and bearing trees. Recently, however, even near the coast, summer pruning of bearing trees has become a wide practice, and we believe it the best course. Fall pruning of apricots after the leaves begin to droop is perfectly admissible. It is a hastening of winter pruning, which does not injure the tree and is desirable because the days are longer, the ground dry and the work can be done at less cost. Spring pruning of trees which have been neglected through the winter is better than to allow the trees to over bear and produce a mass of small fruit. At this time of the year much hand trimming can be avoided by pruning out surplus shoots and by shortening those which are setting too much for their strength. Thus it appears that you can prune the bearing apricot at almost any time of the year—it submits very gracefully to the maxim of some old horticulturist that "the time to prune is when your knife is sharp." We presume that if any bets have

been made over the dispute to which our correspondent alludes they can all be drawn.

Northern Tide Lands for Asparagus.

TO THE EDITOR:—I wish to raise asparagus on my farm in Tillamook. It is choice tide land reclaimed by dikes. Would the plant be successful on such land?—READER, Astoria, Or.

In California we are growing some asparagus on recently reclaimed tide lands, but the greater part is grown upon reclaimed tule lands in the interior of the State, which are different from tide lands from the fact that they had been overflowed by fresh and not by salt water. All the land used for asparagus growing in California is exceedingly light and loose in character. The tide land is sandy; the reclaimed land in the interior is formed of river sediment and decomposed vegetation. We are not growing the plant on heavy land of any character; in fact, land which hardens and bakes on drying is not suitable. The plant thrives best where it can extend its roots freely and send its shoots upward without encountering much opposition from the soil. Although heavy soils can be rendered suitable for asparagus growing by the addition of sand and manure, we have such a large area of natural suitable soil that no one thinks of improving land for asparagus on a commercial scale. Another advantage which we have is that our winters are so mild that the shoots begin to appear in January and can be cut continuously from January until May, after which little cutting is done and the plant is allowed to make the top growth necessary for the refreshment of its roots. Our asparagus canneries are large establishments situated for the most part on land which grows the asparagus, so that our canned asparagus, taken directly from the field, is really better than fresh asparagus which has been hauled or carried about for a day or two in the retail trade. Our book on "California Vegetables in Garden and Field" gives quite in detail the methods employed in asparagus growing in this State.

Grain on Corn Tassels—Corn Smut.

TO THE EDITOR:—In the last issue of your valuable paper (Sept. 6, page 147), Subscriber reports finding an ear of corn at the end of a corn tassel, which seems to be quite a novelty. In my patch they are, or have been, quite numerous—scores, if not hundreds, of them. I think they appear only on suckers—seldom, if ever, on the main stock. The ears are not always well covered with kernels. The variety is a large white dent, fairly early, and often producing two and sometimes three or four ears to the stock. The other varieties may have the same characteristics.

Can you tell me the cause of and remedy for smut on corn?—W. F. WATERMAN, Berros.

We are glad of this information. It will interest many who are not familiar with the facts.

Corn smut is the work of a fungus which invades the kernel and turns the starchy contents into masses of vile spores by which the fungus reproduces itself. It is not the same fungus which causes wheat smut, but it is very like it. The only treatment is also like that employed to secure clean wheat, and that is to treat the seed with a fungicide to kill the spores, which are apt to be on the surface and go into the ground with it when the corn is planted. The advice given quite fully for wheat in our last issue is applicable to seed corn. The occurrence of the disease can also be much reduced by taking off and burning the smutty ears as soon as they can be seen.

Sugar Prune—Winterstein Apple.

TO THE EDITOR:—What success has there been experienced with the Sugar prune? Is it as good as expected? Will it ship well as fresh fruit or is it good only for drying? Do you consider it profitable as far north as British Columbia? The trees certainly have made a magnificent growth so far. What about the merits of the Winterstein apple?—R. LAYRITZ, Victoria.

As we have already stated, this season the Sugar prune seems to be justifying the expectations of it. It is a prolific bearer and that was an important point to determine. We have not heard of results of fresh shipments: we see no reason why it should not carry well. As to its success and value in your latitude only local treatment will show. It ought to do well wherever the French prune does at least. We have seen Winterstein apples which justify Mr. Burbank's claims: it has not been widely grown enough yet to fix its place in the fruit list, however.

Poisoning Wasps.

TO THE EDITOR:—Can you tell me, please, through your esteemed paper how to get rid of wasps, which are here in great numbers around the fruit trees, eating raspberries, blackberries, cherries, plums, pears, apples, peaches, grapes and, in fact, any kind of fruit. Would poisoning do? How shall I apply it and not endanger the bees, which, in some cases, particularly on raspberries, eat over ripe fruit, too?—R. LAYRITZ, British Columbia.

The wasp family like fresh meat. Dissolve white arsenic in hot water. Cut beef liver in chunks the size of your fist. Soak these in the arsenic solution and hang on wire hooks out of the reach of cats and dogs. Wasps go to them readily and bees let them alone.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 15, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather has continued clear and warm, becoming cooler toward the close of the week. Conditions have been very favorable for maturing grapes and late fruits, and fruit drying has progressed rapidly. Wine grapes are ripe and crushing has commenced. Peach drying is nearly finished; the crop is heavy, but much has gone to waste. Prune curing is progressing. The deciduous fruit crop of nearly all varieties is reported the largest ever raised, but there will be a great loss through the scarcity of labor. Bartlett pears are very plentiful and of excellent quality. Citrus fruits are thrifty. The almond crop is unusually heavy. Hop picking and drying are progressing. Forest fires are causing much damage in Yuba and Shasta counties.

COAST AND BAY SECTIONS.

Warm weather has continued during the week, and in all sections except the immediate coast, where heavy fogs have prevailed, conditions have been very favorable for fruit drying and maturing late fruits and grapes. Correspondents in nearly all sections report the deciduous fruit crop remarkably heavy and in some places the largest ever raised. Much of the fruit is being lost through scarcity of labor and refusal of canneries to handle the crop. Late grapes are ripening, and wineries will commence operations soon. Apples are of excellent quality in Humboldt county. Hops are yielding above average in the northern counties. Beans, corn and potatoes are in good condition. Smoke from fires in the north prevails along the coast.

SAN JOAQUIN VALLEY.

Warm, partly cloudy weather has prevailed during the week, and much progress has been made in raisin curing and fruit drying. The grape crop is reported very heavy and of excellent quality; picking will be finished in some places about September 30. There is said to be a scarcity of trays for drying the heavy yield of raisin grapes, and some of the crop will go to the wineries. Prunes are small in size, but the yield is heavy. Freestone peaches are mostly cured or on the trays. Late peaches are ripening. Prune picking and drying are progressing. A large crop of almonds has been gathered. Alfalfa is doing well. Corn is thrifty. Seedling has commenced in Madera county.

SOUTHERN CALIFORNIA.

The weather has been warm and clear during the week, with cool, foggy nights along the coast. Grapes are yielding a much better crop in the vicinity of San Diego than expected at the beginning of the season. Raisin curing and fruit drying are progressing satisfactorily. Peaches and pears are very plentiful. Citrus fruits are in excellent condition, and a large crop of oranges is expected. Walnuts continue in good condition. Sweet potatoes are of good quality, but the yield is light. Corn harvest is nearly completed. Dry feed is plentiful.

EUREKA SUMMARY.—Harvesting peas begun, but fog retards threshing. Vegetables are yielding well. Apples are being marketed; excellent quality. Fruit is generally plentiful. Rain is badly needed in the interior.

LOS ANGELES SUMMARY.—Continued cool, cloudy mornings in the coast sections, fair and warm in the interior; good for fruit drying. Deciduous fruit crop nearly all cared for in places.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, September 17, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	.23	.37	.83	80	50
Red Bluff.....	.00	.11	.11	.51	98	58
Sacramento.....	.00	.11	.11	.21	90	56
San Francisco.....	.00	.11	.11	.21	84	58
Fresno.....	.00	.11	.11	.21	98	58
Independence.....	.00	.26	.42	.21	94	60
San Luis Obispo.....	.00	.11	.11	.25	78	54
Los Angeles.....	.00	.11	.09	.10	80	60
San Diego.....	.00	.90	.10	.10	70	62
Yuma.....	.00	.00	.22	.62	106	72

ENTOMOLOGICAL.

Fumigation for Scale Insects.

From a paper by MR. A. E. BENNETT at the University Farmers' Institute at Tustin.

Scale insects are closely allied to the aphids or plant lice family in their habits, but differ greatly in appearance. Some confine themselves to a single genus of plant, while others attack a great variety, and when present in numbers soon cause the plant to lose its vitality. Scale insects have been known from time immemorial.

The orchards of California have been troubled with these pests for more than thirty years. Some species which once threatened our industry, especially the cottony cushion scale, have been conquered, but other species have taken their places, and to-day we find our trees infected with many scales, of which my time allows brief mention of the more troublesome.

BLACK OR OLIVE SCALE.—This insect can be found everywhere—from mountain to sea—on native or cultivated trees and shrubs. In the orchard it infests the olive, orange, lemon, apricot, peach, prune, pear and fig. It has numerous enemies, but to date none have been established in California that have been able to cope with it satisfactorily. Cape Colony, South Africa, was once overrun with this pest, but a parasite (*Scutellista Cyanea*) has annihilated them, and Alex. Craw is seeking to establish them here. The outlook at present is very favorable. If this parasite is ever established in California we may expect great things.

THE RED SCALE.—Next in importance is the red scale. This pest is one of the worst scale insects of the orange groves. It is one of the armored scales and very hard to conquer. Its native country is not known exactly, but the Orient or Tahiti has probably furnished it to California.

It attacks the citrus fruits, walnuts, grape vines, rose bushes, etc. The red scale has its enemies, but not in numbers sufficient to keep it in check.

THE PURPLE SCALE.—Last, we have the purple scale—not that these are all of the scale insects in our midst, but the black, the red and the purple scale are the most troublesome and in the order named. The purple scale is a comparatively new scale insect for California. It made its first appearance in some orange trees imported from Florida into Los Angeles county in 1890. It is one of the worst pests of the orange, and very stringent measures are being taken to completely eradicate it. While the purple scale spreads from tree to tree very slowly, when it once becomes established it is most difficult of eradication, and for this reason the horticulturists are very anxious that it be stamped out before it spreads over a wide area. Its ravages at present are, fortunately, confined to a limited range of territory. It infests citrus trees, rose bushes and other shrubs. On orange and lemon trees it is found thickest near the ground and on the north side of the tree.

CONTROL BY FUMIGATION.—This brings us to the subject in hand—artificial control of these insect pests by means of fumigation with hydro-cyanic acid gas. Fumigation has been in use for the purpose for a considerable period, but may be said to have passed the experimental stage and become scientifically applicable some twelve years ago. Like all new things, its beginnings were very small and many were the discouragements of the plucky men who, many said, were fighting against fate, but who kept at the proposition until success crowned their efforts and the redemption of the citrus industry was possible. At first six or eight tents made a respectable outfit; now the professional fumigator with 150 tents is only a moderate operator.

TREATING BLACK SCALE.—We will consider the treatment of these pests separately. The black scale are the most generally distributed of all the scales. Nominally they have a distinct period of hatching, governed by the locality and, to some extent, by the individual orchard in a locality. As to be successful it would be necessary to treat them while young, or before they are, say, half grown, when they have gathered about them their rubber houses, we must needs be governed by these conditions as to the time of treatment. Every season, however, we find individual orchards where all the scale cannot be found in condition for treatment at the one time. This calls for two fumigations for complete success.

From the nature of the case it is not possible for the fumigators to kill all the black scale that infest an orchard. Contrary to the usual idea, the young may be on the ground, on the rubbish and weeds. The question of handling the black scale is a big one, as it no longer confines its work to the immediate coast, but is gradually becoming acclimated to the interior valleys, and so it hatches in some localities in July and in others not until November. The magnitude of its extermination may, therefore, be comprehended. Again, this variety is the healthiest pest known to orchardists, and has never been known to die of its own weakness or from attacks of disease.

Fumigation is easily in the lead as a means of combating the black scale.

TREATMENT OF RED SCALE.—The red scale are not so much dreaded by orange growers as formerly. Their treatment is not nearly so perplexing as that of either the black or the purple scale, as a thorough treatment will be successful at any time of the year. However, they will bear watching. Fumigation was first brought into prominence in the treatment of the red scale, and has proven as effective as we can hope any remedy to be.

PURPLE SCALE.—The purple scale are by far the most difficult scale to down that we have. My experience with them has been mostly in San Diego county, where I have fumigated a large number of trees for the Land & Town Co. The orchards about Chula Vista are, many of them, literally plastered with these scales. One fumigation a year does not keep the orchards clean, although it holds them in check so that most of the fruit is merchantable. The purple scale, like the black scale, must be gassed while the scales are young, and as they do not hatch uniformly it is absolutely impossible to exterminate them with one treatment. I should recommend three or four successive treatments at intervals of four or five weeks. Our fruit growers will make a big mistake if they do not see to it that the few purple scale in this valley are absolutely annihilated, and that right early. If they cannot be absolutely exterminated by fumigation, every tree should be burned, root and branch, right where it is growing. The horticultural commissioners should not be given any rest until this matter is effectually disposed of. They should be urged to employ an inspector to go over the two or three orchards that are known to be infested, and perhaps some adjoining orchards, making a detailed examination to be sure that no tree infested escapes. They should be gone over several times by this inspector at intervals of four or five weeks to make doubly sure of his work.

FUMIGATION AS A TONIC.—The gas exerts a direct tonic effect upon the foliage of the trees. This may not be easily demonstrated, but one thing is certain, the gas does keep the breathing surface of the trees clean and in better condition to assimilate the food sent up from the soil. It kills all fungi that may fasten itself upon the foliage, either from the presence of honey dew caused from scale, or from other causes, keeping the functions of leaf and branch active. The rich, glossy foliage that appears a week or two after treatment is beneficial in a hygienic way to the entire economy of wood and fruit growth.

PARASITES.—As to the effects of fumigation upon parasites of black scale, I would offer in evidence that in July of this year I secured the contract to fumigate the lemon groves on Alamitos Heights, near Long Beach. This work was subjected to very close inspection by the horticultural commissioner of Los Angeles county, who found the unusual result that where the amount of cyanide used was all that the fumigator thought the trees could stand with safety, and where all the black scale were killed so thoroughly that none were alive outside the shell, there were still found under the scale upon the trees large numbers of rhizobius, both in the beetle and larva stage, showing that the cyanide treatment did not kill the parasites which prey upon the scale, although the scale itself was eradicated.

AGRICULTURAL SCIENCE.

Relation of Bacteria to Agriculture.

By MR. ROY K. BISHOP of Orange at the University Farmers' Institute at Tustin.

In discussing "The Relation of Bacteria to Agriculture" let me say that the field is so broad and so important that it will be necessary to confine our attention to the phases bearing directly upon the farm. As agriculture itself grades off by degrees into numerous secondary industries so does agricultural bacteriology broaden. The intention is not to tell something new nor to advise people to do this or that but to show how immensely important bacteria are to the agriculturist, and thus create an interest that will lead to a better understanding of this important branch.

THE BACTERIA.—At this point it is well to say something about the individual bacteria: Bacteria at the present time are considered by scientists as forming a distinct class of plants. They are the lowest form of plant life. In structure, the bacteria are very simple, being a small drop of protoplasm surrounded by a membrane making but a single cell.

They are of various shapes, some being round (*Micrococcus*), others being short rods (*Bacillus*), while still others are long rods curved after the fashion of a corkscrew (*Spirillum*), or elongated into threads (*Desmobacteria*).

As to motility it may be said that some are active while others do not manifest the least bit of motion. The motile species have three distinct modes of motion, which is accomplished by flagella (little hairlike appendages). The motions may be described as swimming when they move in a straight line, or ser-

pentine, as in the case of the spiral one which appears to move like a snake, and the third movement when they appear to be rapidly turning somersaults, but do not pass over any considerable distance.

LIFE OF BACTERIA.—As to size the bacteria are infinitely small, varying from 0.00002 to 0.00006 of an inch in diameter. But in the case of the elongated ones they may be in length many times the diameter. Bacteria multiply principally by division of the original cell. There is seen first a constriction around the middle of the cell which eventually cuts it in two. This division is very rapid when all the conditions are favorable, taking place in some cases every half hour. You will notice that this increase would follow as a geometrical progression, and in twenty-four hours one individual will produce about seventeen millions.

Some bacteria form spores which are very hard to kill, and enable the bacteria to withstand adverse conditions, such as being boiled in water for an hour in some instances.

Bacteria are present everywhere in nature, so that when the conditions are favorable (the conditions of food, moisture, temperature and oxygen), they begin to grow, and in their growth they produce chemical changes, and it is in these changes that their importance to agriculture results.

WORK OF BACTERIA.—These chemical changes are of two kinds, namely: Anabolism—the building up of complex compounds from simple ones; and katabolism—decomposition, the breaking down of complex bodies into simpler ones.

The higher plants require nitrogen in the form of nitrates, and in nature these are supplied to the soil by the action of bacteria, they being capable of forming nitric acid, which combines with bases in the soil, such as lime, potash and soda. In this case the bacteria may make use of atmospheric nitrogen or take that liberated from complex bodies by the decomposition caused by other bacteria. Thus it is seen that they are great fertilizer agents. Yet there are other bacteria that play important parts in producing sulphates and carbon dioxide, which are so necessary to the higher plants.

Were it not for bacteria it would be no use to add manure to the soil. And if it were not for another class of bacteria leguminous plants, which are so important for green manuring, would be unable to utilize atmospheric nitrogen.

The soil is full of bacteria and they play an important part in the formation of the same. They break down and build up compounds for food for the higher plants. The origin of humus, this very important and life-giving ingredient of the soil, is traceable to life, and bacteria are the most important agents in its formation. For a long time the weathering of rocks was attributed to physical agencies, but now it is known that micro-organisms play an important part.

BACTERIA IN DAIRYING.—The part that bacteria play in the dairy is of the utmost importance. The souring of milk, the ripening of cream, the desirable flavors of butter and cheese, are all due to particular species of bacteria. Yet on the other hand there are species that are deleterious, such as those producing slimy milk, bitter milk, red milk, blue milk, yellow and green milk. Further, there are those producing unpleasant flavors in the butter and cheese. Thus the dairyman has the task of cultivating the desirable ones and weeding out the undesirable. The housewife knows how it is necessary to preserve the fruits and many other foods with the utmost care to prevent their destruction by bacteria and higher fungi. The chief cause of spoiled fruits is called fermentation. In regard to fermentation it cannot be said that bacteria are responsible in general, yet in many cases they are indirect agents, while in some, as in the production of vinegar, they are the direct agents. Here it is again: while they destroy our preserved fruits they produce our vinegar, returning good for evil.

SOME BACTERIA HARMFUL.—While we have seen that bacteria are very beneficial in many respects, in fact they are an absolute necessity, yet there are many we could get along without and wished they did not exist. There are many disease-producing bacteria (Pathogenic bacteria) that may infect milk and thus endanger man. The more important diseases produced are tuberculosis, typhoid fever, scarlet fever, diphtheria and cholera. Then there are important diseases of our domestic animals which are due to bacteria germs. In brief, the more important ones are: in cattle, anthrax, tuberculosis and black leg; among hogs the most important is hog cholera; among horses are glanders, distemper and lockjaw. Hydrophobia among dogs may be considered of importance as a source of danger, and fowl brood is of great importance to the bee men. While there are many more worthy of mention, this will suffice to indicate the importance of injurious bacteria to stockmen.

But the plants of our gardens and fields and trees of our orchards are not free from the ravages of these little enemies. The losses from this source are equal to those causing disease in the animal kingdom, and are worthy of mention briefly: the bear blight, apple blight, twig gall of the olive, curcubit wilt, which affects the tomato, the blight of the locust, and of great importance to us is the disease of the

walnut. And further may be mentioned the sorghum blight, diseases of the bean, black disease of corn, and many, many others. Of those causing the rotting of fruits may be mentioned the brown rot of potatoes, tomatoes and egg plant with some rots of the apple and lemon.

While there are many beneficial things resulting from bacterial life that have not been mentioned, there are also many injurious results left untold. Yet it is hoped that it has been indicated how important it is to have a practical knowledge of bacteriology, that we may be able to aid our little friends and fight our enemies.

Discoveries in bacteriology have in some respects revolutionized agricultural processes, and in many cases methods have been adopted by us as farmers without the knowledge that bacteriological research was benefiting us. And while we have always said that bacteria were very injurious because we have only heard of them through the physicians, let us now learn that they are the greatest benefit to us. For the soil could not be properly tilled, unless, with all the other things that we have, we have not the proper kinds of bacteria. In the words of a great professor, "without the aid of bacteria farming is impossible."

THE IRRIGATOR.

Water Supply and Water Development.

By MR. E. G. WARE of Garden Grove, Orange county, at the University Farmers' Institute at Westminster.

As far as agricultural resources are concerned, water development has made southern California what it is to-day. The first water that was available was in rivers and creeks, which required a system of canals and irrigation ditches. The new supply comes from the underground artesian strata. The third supply is that by building dams in the mountains to retain in large reservoirs the water that usually runs to waste. The water in the natural streams was all appropriated long ago, and there was not enough to go around. Developing water by building dams to restrain the waste waters requires large capital. Now the Government is going into development of water. If carried out, it is hard to tell the amount of wealth it will add to the nation's progress and prosperity, to a great number of farmers and make homes for thousands of families.

The development of water I wish to particularly call your attention to is that developed by farmers as individuals, which can go on all the time without waiting for the machinery of legislation to move and get into running order. Orange county from Anaheim to the ocean is a field where the individual farmer can work out this problem of water development. If one is not strong enough to do it he can join with his neighbors and form a company. The whole country is underlaid with artesian streams. You can hardly put down a well pipe anywhere and miss the water. Here in Westminster all you have to do is to put down a well and the water flows without further expense, while only a short distance northeast the water does not come to the surface, and after you sink your well you have to buy an expensive engine and pump and then pay the cost of running the plant.

It looks, at first sight, as if the farmer who has to develop water with an engine and pump is not in the game with the farmer who has a flowing well. In a short race he is not, but in a long race the man with the engine and pump will win. This lies in the fact that what costs us the most we appreciate the most highly and put to the best use, while that which costs us but little in the end often proves our destruction. The Lord knew what He was doing when He said man should earn his bread by the sweat of his brow. Civilization is several thousand years in advance because of that decree.

The man with the flowing well is apt to use so much water, because it costs nothing, that in a few years a great deal of the land which formerly grew great crops of corn will only grow salt grass because of the alkali. The proof of this is right here in Westminster, where a great deal of land that used to grow the finest kind of corn will not sprout corn to-day. To restore this land to its former state it must be tiled for underdrainage, which is quite an expense and has to be added to the amount lost by the loss of crops for many years.

The man with the pump will only use the water necessary to raise his crop, because it costs him money and consequently does not pump enough to fill the land up with water and bring the alkali to the surface. In an alfalfa field there is a great advantage in the pump, as you have a large stream of water and do not have to hold the water long enough on the ground to raise the alkali. This land will improve under the pump and in the long run the owner will have a better place than the man with a flowing well. The more a thing costs the better we look after it.

PUMPING.—I think the first gas engine was put in near Anaheim in 1894, but most of the engines have been put in, for water development, in the last two

years. The amount of water that all the engines within 4 miles of Anaheim are able to pump I estimate to be over 2000 inches. According to borings that have been made above Anaheim to the bed rock of the Santa Ana river, it is estimated that 5000 inches of water come down the bed of the river; that 2000 inches pass beneath the surface and are lost to the irrigating companies. I presume this is part of the water brought to the surface on the farms below Anaheim by the pumps and artesian wells.

The height the water is being lifted by the pumps is usually from 20 to 50 feet, in some cases considerably deeper. I think the average cost of lifting this water, the cost of distillate, lubricating oils and battery, is about 30 cents per 100 inches per hour. Some engines have crude oil burners, which are said to reduce the cost nearly one-half. To the above must be added the cost of repairs and wear and tear on engine and pump. Very few engines have a man to look after them while running. If anything gets out of order the man who irrigates can tell by the explosion and come up and adjust the difficulty. Some of the large 22 H. P. machines have a float in a barrel of water. If the pump stops the water runs out of the barrel and the float drops, pulling a wire attached to the switch of the battery and the engine stops.

Most of the engines range in size from 6 to 25 H. P. and range in cost, with engine house and pump, from \$500 to \$1500—outside of the cost of the well.

At the close of his paper Mr. Ware gave instances of the crops successfully grown in the district by pump irrigation. He explained that the first year the land took large amounts of water and results were not so satisfactory as later. He gave instances of people who were in doubt at first—were doubtful about the profits of their investments in pumping—but by the third year they had learned better how to use the water to advantage, and not only were confirmed in its profitability, but often thought it wise to buy larger machinery.

HORTICULTURE.

What is Necessary to Successful Lemon Culture.

By MR. C. C. TEAGUE of Santa Paula, at the University Farmers' Institutes in Southern California.

It is my purpose in this paper to deal more particularly with the handling, curing and marketing of the lemon, rather than with the growth and care of the tree. I have given the lemon business the closest attention and thought of my life for the past ten years, and as my experience increases and as I travel around and see the different conditions under which the lemon is being grown and attempted to be grown, I realize more and more how little we know of the lemon and how much room there is at the top. The lemon business is becoming more and more the survival of the fittest. The poorly located, poorly watered, poorly cared for orchards must inevitably drop out of the running. Southern California is full of orchards which are only monuments of the mistakes of those who planted them; they never have been and never will be profitable. Many of them were set out by good, shrewd, level-headed business men, who saw the possibilities of the lemon business, but who did not realize what is necessary to its success. In my opinion, there is no other orchard or farming business which requires as much close, careful, intelligent attention to make it a success as the lemon business.

ESSENTIALS.—What is necessary to the successful and profitable growing and handling of lemons? In my judgment, the following are some of the most important things:

1. Proper climatic conditions.
2. Proper soil conditions.
3. An abundant supply of good water.
4. Selection of trees.
5. Care of trees.
6. Picking fruit properly.
7. Curing properly.
8. Marketing.

Taking these up in their order, first is:

CLIMATIC CONDITIONS.—One setting out a lemon orchard should strive to get a location as nearly frostless as possible, and not so far from the coast as to be too hot. Too great heat is almost as fatal as too great cold, as the lemon will not bear well in a very hot climate and is a great deal more apt to have the major portion of its crop in the late fall months, when prices are low. On the other hand, as many of us know to our sorrow, it is a great disadvantage to be subject to the ravages of Jack Frost.

Before setting out a lemon grove, great pains should be taken to ascertain whether or not the location is frostless. The main point in this is good drainage for the cold air—in other words, that your land is not in a basin, but that it and the land surrounding it has a good fall.

SOIL.—The character of the soil is also important.

The best results will be obtained from a light, loamy soil. The lemon tree does not like a heavy soil, and it should be avoided. To illustrate this point: I have charge of a grove, portions of which are heavy and portions light. The trees are the same age and varieties, came from the same nursery and have had exactly the same care since planting. The trees are nine years old, and those set in high soil have up to the present time produced nearly double the amount of fruit that those on heavy soil have produced, and yet the heavy soil is richer and will produce more beans or corn.

WATER SUPPLY.—Care should be taken that the water supply is unfailing and the quality good. Trees will not flourish if the water with which they are irrigated contains much salt or alkali.

SELECTION OF TREES.—This is very important, and great care should be taken. I have often said that if I ever planted another lemon grove I should be absolutely certain as to the stock I was getting: that the trees from which the buds came were prolific bearers, and that the fruit was smooth and had good keeping qualities. I should also try to ascertain whether or not the buds were taken from bearing wood or from sucker growth. If from the latter, I should not want them at all. I think that all responsible nurserymen nowadays recognize that buds should be taken from bearing wood, and instruct their employees accordingly; but sucker buds are much easier to get and, I fear, are too often used. Trees from sucker buds make fine nursery trees and trees that sell well, but they are much slower in coming to bearing, and, I believe, will never bear as well or have as good fruit.

Care should also be taken to ascertain the variety that is best adapted to the locality in which you contemplate planting. I think that it is now conceded that the Eureka, Villa Franca and Lisbon are the three leading varieties. All three have their friends and advocates—probably accounted for by the fact that the soil and climatic conditions in which any one variety flourishes, the others do not always do so well. My experience has been principally with Eureka and Lisbons, and I confess I am somewhat undecided as to which is the more desirable. The Lisbon grows much more vigorously, makes a larger tree, is hardier, less subject to disease and withstands the cold weather much better than the Eureka. It is also a better tree to train in the way it should go, as the wood is stiffer, and it has a tendency to bear its fruit on the inside of the tree, while the Eureka always bears its fruit on the ends of the limbs, which has a tendency, on account of the leverage, to pull the trees out of shape, making it difficult to keep them in good condition. The Lisbon in this locality bears smoother fruit. On the other hand, the Eureka has a little better percentage of summer fruits, and is free from thorns, which makes it pleasanter to handle.

CARE OF TREES.—I shall not attempt to go into details as to what is necessary in the way of cultivation, irrigation, pruning and other things requisite to bring an orchard to bearing. All of these things are being constantly discussed in our fruit journals. Different soils and climatic conditions demand different treatment, and many good men are evidently achieving good results by following different methods. I hasten, then, from the period between setting the tree and its beginning to bear, assuming that the person planting the grove has sufficient intelligence to give it proper care.

PICKING.—Many of our lemon growers do not seem to realize how important it is to cut lemons at the proper time, but seem to think that any time when they can get to them is good enough for the lemon, and that after they get their oranges out of the way and nothing else about the ranch needs attention, they can begin picking lemons. In a trip which I took through the San Gabriel valley last March, I was astonished to see how the lemon picking was being neglected. The trees in a great many groves which I saw were full of large, yellow lemons, which had been allowed to ripen on the trees, and which, because of this neglect, would never be first-class—in fact, hardly merchantable—both because of their large size and because the keeping quality of lemons ripened on the tree is never good.

Our practice is to pick with a 2½-inch ring, never allowing over six weeks to elapse between pickings and usually not over a month. Great care should be used in picking and, in fact, in the handling of the lemon, from the time it leaves the tree until it is shipped. Show me a man who thinks that it is not necessary to handle a lemon carefully, and I will show you one whose fruit is not giving good satisfaction to the trade and who thinks the lemon business is not profitable and is thinking of grubbing up his trees or budding them over. I wish particularly to impress upon your minds how important a factor great care in picking is in the successful handling of the lemon. At one time I was of the opinion that after lemons had been in the packing house for a few weeks that they could be handled much more roughly than when they were freshly cut, but experience has taught me that this is a mistake and that, if anything, the cured lemons are the more easily injured.

After the lemons are picked, the question which confronts the grower is: What am I going to do with them? Many have succeeded up to this point, and

have still not found the lemon business profitable. As a rule, I believe that the grower who has to depend upon selling his fruit green to the buyer who is willing to pay the highest price for it has not been successful for the simple reason that, when the market was low the buyer did not want the fruit at any price, and when it was high the grower usually had very little fruit. In other words, few buyers have facilities and are prepared to hold lemons during periods of low prices, and if the grower is not prepared to handle his own fruit, he meets with loss. Many prominent growers have had such poor success in their attempts to hold their winter lemons that they have abandoned that method and are advocating marketing the lemons as fast as they are picked from the tree. If we were obliged to sell our lemons as soon as they are picked, and could not hold them through periods of low prices, I fear the lemon business would be doomed to failure. Consider it a moment: Nearly 75% of our lemons are picked during the winter and spring months, when the price is usually low, and when lemons shipped to Eastern markets will sometimes hardly bring the cost of freight. On the other hand, over 75% of the market—in other words, the consumption of lemons—is in the summer months. What, then, must the grower do to make his business profitable? He must certainly be prepared to hold his lemons through periods of low prices until the time arrives when he can sell them at a fair profit. Can this be done? I think it can. The principle in the successful keeping of lemons, though exceedingly simple, is not well understood by many growers. To obtain this result, proper ventilation is much more important than low temperatures. In simple language, the proper condition to maintain is at a point just between where the lemon sweats and where it shrivels. If this condition can be maintained, the lemon will keep almost indefinitely. Many growers who have had good success in handling small quantities of fruit will think this a simple matter; but when they attempt to handle large quantities and are confronted with the proposition of massing large quantities of green lemons in the same house with lemons in different stages of curing, they will conclude that they do not know as much about it as they think they do. Such has been my experience, and so disastrous was it that I had to reverse my ideas and start out on a new principle.

How can the point between where the lemon will sweat and where it will shrivel be maintained? Certainly not with the double-walled, closed curing houses almost universally used by our lemon growers. They are on the wrong principle and will never hold large quantities successfully by that method. Acting on this conviction, the old packing house of the Lemon-eira Company was remodeled and new ones built on this new principle, which was to let as much air into the house as possible. This was accomplished by making the house simply a shed, with a roof and floor and no sides. The fruit is piled in blocks of about a carload each, and each block covered with a canvas, which is raised or lowered to suit the particular needs of the fruit. In this manner we are able to give each of the blocks the exact treatment that it requires, regardless of the other blocks around it. I shall not attempt to go into the details of this method; suffice it to say we have handled over seventy-five cars of lemons in this way this year—some of them being held five and six months in excellent condition, and they gave excellent satisfaction to our trade. We have not shipped lemons this year under ice, and to the best of our knowledge we are the only shipper who makes a practice of shipping to the Eastern markets who have been able to do so without icing their cars.

I believe that one of the principal reasons why so many of our California lemons arrive in the East in poor condition is on account of the treatment they receive in the packing houses before they start. This is partially due to rough handling, but still more to the fact that the lemons have not received proper ventilation in the curing. As I have said before, the lemon should never be allowed to sweat. If moisture is allowed to collect on the fruit, the stems will drop out and the keeping quality is gone. Be sure and have plenty of air in your lemon house, and bear in mind that it is better to have the fruit shrivel than sweat.

MARKETING.—The successful marketing of lemons is, perhaps, almost first in importance. Those most successful in the lemon business have adopted a few principles which they have adhered to strictly. The following are a few of these:

1. To put up an honest, neat, highly-graded pack.
2. To adopt a brand and never allow any fruit packed under it that is not strictly up to grade.
3. If the fruit is known to have poor keeping quality, mark it and sell it as such. It is far better to have the decay taken out in your packing house than to pay freight on it to the East and then have it deducted there, where it will injure the reputation of your pack and of California lemons in general.
4. Establish and maintain a regular trade and always keep it supplied. This can only be done by shipping in carload lots. If your grove is not large enough for this, your only hope is to associate yourself with others for this purpose, forming a lemon association. It was for this particular purpose that

the Southern California Fruit Exchange was organized.

The purpose of this paper is not to criticize the methods of others, but rather to help any who may be in doubt. I believe that if anyone following these suggestions is enabled to put his fruit on the market in better condition, we will all receive a benefit by increasing the good reputation of California lemons.

Apricot Growing.

By MR. N. A. CLIFFORD, at the University Farmers' Institute at Tustin, Orange county.

My advice to any one in regard to planting and caring for an apricot orchard would be to first secure a piece of deep, sandy loam land, or a good piece of adobe. I have not grown apricots on such soil, but I have seen such orchards. I have seen many failures on land with heavy clay subsoil, and where deep gravel beds came near the surface, and I have not seen any that gave good results.

PLANTING.—Thoroughly soak the land by winter irrigation, plow and harrow well. Stake it off 30 feet each way, which will allow about fifty trees per acre. Select good, thrifty trees, one year old from the bud on peach root. I want strongly grown yearlings, headed and branched 4 to 5 feet from the ground, and 1 inch or more in diameter. Cut off the roots smoothly within 3 or 4 inches from the main root. Plant the trees so that they stand about 3 inches deeper than they grew in the nursery, so as to have the chief lateral roots below the reach of the plow. Fill the holes with loose earth and settle with water. Take a 4-foot lath and go over the planting and cut off all the trees at 4 feet from the ground—not leaving a limb on them. When the buds appear pull them all off except three near the top. Then your trees will be uniform in height and shape, and will make a better growth than when limbs are left on them.

PRUNING.—For the first four years prune so as to give them a good shape. In some cases it pays to pinch back the buds in summer, so the trees will branch out properly and will not make long branchless limbs that have to be cut off later. Cut back heavily in winter, but when the trees are four years old the cutting back should cease and only the lower, drooping limbs should be taken off to allow one to work up to the trees.

THE ROYAL.—I think the Royal the best variety. There may be others as good, but I doubt if any are better for our climate and soil.

INTER-CROPPING AND IRRIGATION.—I would plant any small crops between the trees the first three or four years, but not near enough to interfere with the growth of the trees.

I have found that one good winter or spring irrigation of from 25 to 30 inches (depth over the land) for trees that have good distance is sufficient. The ground should be well and deeply plowed after the irrigation and kept cultivated till the fruit is ripe, and then let alone till time to irrigate again in winter. My own trees are now twenty years old, and for the last four years have had only one irrigation annually, and they are in fine shape and producing good crops.

Mr. Clifford's location is open somewhat to coast influences and the high trees he advocates are possible, as sunburn is said to be unknown. Winter weed growth is evidently slack, or postponing plowing until the winter or spring irrigation would make it difficult to handle the soil. In other respects Mr. Clifford's points must be considered of local rather than general application.

Bananas at Fresno.

A writer for the Fresno Republican states that, while banana plants are grown in various places in the colonies, they are used simply as ornaments, as, because of improper climate or something of the sort, the fruit does not mature. N. W. Moodey reports, however, that he is cultivating bananas very successfully on his handsome citrus orchard north of Centerville.

The district north of Centerville is becoming one of the handsomest in the county. Counted at one time as very unhealthy, it is, through the sinking of deep wells and proper observation of the rules of health, becoming an attractive place for homes. It contains the oldest orange and lemon orchards in the county.

On Mr. Moodey's place, some years ago, a dozen banana plants were set in among the orange trees in a low corner of the field to help take up the surplus water. Until the last year or two the plants have been pretty much neglected, the fruit maturing in the soft autumn air of that part of the county and then rotting away to the ground with the rest of the plant in midwinter.

Last year Mr. Moodey cut the bananas, when green, from the stalks, and put them away in his lemon house for some time. The fruit was, he says, larger, if anything, than the ordinary banana seen in the market, and was of as fine a flavor. Mr. Moodey had none to sell, using them all in his own family. The bananas now are just in the blossom, the embryo fruit breaking out of the long flower sack.

A Promising Arrangement in the Fresno Region.

In connection with what is said on our first page this week about the development of the San Joaquin, it is interesting to read dispatches from Fresno which state that irrigation litigation, which has lasted twenty years and involved the expenditure of hundreds of thousands of dollars, was ended last week in court at Hanford, Judge Austin presiding in the place of Judge Short, who deemed himself disqualified.

The litigation affected the taking of water from Kings river for irrigation purposes and was between what are known as the Lower Kings River companies, the People's Ditch Co., the Last Chance Ditch Co. and the Lower Kings River Ditch Co., which supply Kings county with water, on the one hand, and the Centerville & Kingsburg Co., the Fowler Switch Canal Co., the Emigrant Ditch Co. and the Con. Canal Co., which supply water to land in Fresno county, on the other side.

Judgments were entered in cases wherein the first named companies were plaintiff and the last named companies defendants, allowing the plaintiffs in the aggregate 636½ cubic feet of water per second, the other companies coming in for whatever water there may be in excess of that flow.

The Fresno Canal Co. and the Centerville & Kingsburg Co. had already settled all their differences and a settlement also had been arrived at between the Fresno Canal Co. and the Alta Irrigation District. Similarly a basis of settlement had been agreed upon between the Centerville & Kingsburg Co. and the Alta Irrigation District.

Much satisfaction is expressed at this ending of long-drawn-out and costly litigation. The settlement, while not satisfactory to everybody, is much more so than the unsettled conditions heretofore existing.

A VERY interesting point concerning cattle diseases in southern California was made quite clear at the institutes in that part of the State last week by Dr. A. R. Ward, veterinarian of the State University. Dr. Ward took the opportunity while attending institutes in Orange county to make post mortems of several animals which had just died, and by courtesy of Prof. Pierce at Santa Ana was able to use his laboratory for examination of the material secured. Clear demonstration was had that the fatal disease in these cases is Texas fever. The speedy course of the disease and some symptoms and conditions of internal organs had convinced many growers that they had to deal with anthrax or with some new local disease, and not with Texas fever. They believed their places were free from ticks, by the work of which the Texas fever is alone able to circulate. Dr. Ward's examinations in several cases show that at least these deaths, which simulated deaths from anthrax and were considered typical cases by the farmers, were really Texas fever cases. While this does not, of course, determine that anthrax does not exist in that region, it does show that many cases believed to be that dread disease are in fact Texas fever. This should be a satisfactory showing, for Texas fever is less malignant than anthrax, does not endanger the lives of men and other animals, but confines itself to horned stock. It can only be communicated by the tick, while anthrax travels by several routes and the germ maintains its life indefinitely. The chief reason why Texas fever has been mistaken for anthrax has been in the quick death of the stock. Most descriptions of the disease speak of slow fatality covering a week perhaps, but there seems to be ample observation showing that Texas fever can do its work in a day or two, and this seems to be its manner largely in the region we first mentioned.

As to the raisin situation as affected by reorganization of the Association, it seems fair to conclude that the organization is in a stronger position to-day with the packers having signed up as they have, than in any previous year. The weather is ideal for the curing of raisins, and the great trouble seems to be in securing trays for drying purposes. This lack of trays is sending a great quantity of raisin grapes to the wineries, which will benefit the raisin market considerably. There seems no reason at the present time why the growers should not receive a fair price for their raisins if they will assist the Association now in its work, but whether they will do this or not remains to be seen.

It seems that the Almond Growers' Association underestimated the crop this year, as notes from our subscribers have already shown. It is said that the output of Davisville district, for instance, will go 250 tons, while liberal estimates early in the season did not exceed 200. Because of this the executive committee of the Almond Growers' Association, which met in Davisville, raised the assessment to meet current expenses from 65 to 80 cents a ton. Why it should cost more per ton to handle a large crop than a smaller one does not seem quite clear but that is the way the report is printed.

THE State Fair is progressing through its second week as we go to press. The stock show, as predicted, was large and the judging aroused much interest. We shall have in future issues further discussion of the display and its lessons.

Agricultural Review.

ALAMEDA.

CHICKENS AND FRUIT.—Oakland Enquirer: From fruit to chickens is a rather abrupt change, but it is the chickens that have supported many a small family during the stress of hard times. According to the standard set by many of the small owners, 2000 chickens will entirely support a family of considerable size and will do inestimable good in the orchard by destroying insect life on the trees and fertilizing the ground. Too many persons have, however, lost thousands of dollars by going into the chicken business too extensively at first, without understanding their care; but those who have started with fifty or less have invariably made a success of it, aside from the results of the orchard.

SHIPPING TOMATOES.—Business at the Decoto railroad station has been lively for the last few weeks, from seven to ten carloads of produce being shipped daily. Jones & Kellerman send three cars of tomatoes daily to the cannery.

BUTTE.

CHAMPION HAY BALERS.—Chico Enterprise: Yesterday one of Walter Bulard's hay presses put out 1005 pounds more than forty tons of hay. This amount, making 431 bales, was baled in 13½ hours. About two months ago the same press and crew baled 192 tons in one week, thirty-seven tons being baled in one day—the largest amount ever put out in a day by a press up to that time. The press is being run by J. S. Crawford, the crew consisting of the following men: J. H. Boyd, B. F. Long, James Dargie, James Kimmins and Claude Bearse.

CONTRA COSTA.

A NEW ALMOND.—A new variety of almond trees is being grown by G. W. Knight of Knightsen. It has about the same size and appearance as the Nonpareil—a shade less in every particular, perhaps. The chief peculiarities of it are the erectness of the limbs, the evenness with which the nuts are distributed over the trees, and the large proportion growing on the bodies of the main limbs. It seems to be a healthy sort of variety, and a steady bearer of good crops. The stock of 1000 trees for this year in this line is all spoken for.

FRESNO.

SENDING FRESH FIGS EASTWARD.—George C. Roeding, the fig grower, has sent a second consignment of about 200 pounds of Calimyrna fresh figs addressed to New York. A portion is consigned to Washington, D. C., to Secretary of Agriculture Wilson and Department Entomologist L. O. Howard. The shipment made last week was received in Chicago in fine condition. This is believed to be the greatest distance fresh figs have ever been shipped. The New York shipment will require twenty-four hours longer in transit, and, if the figs arrive in good condition, Roeding will arrange with brokers and dealers in the East to handle a large quantity of fresh figs. Aside from a few figs received from Florida, there are no fresh figs in the Eastern markets.

DRIED FRUIT COMPANY.—A Fresno telegram says: The Fresno Growers' Dried Fruit Company is now an established fact. Articles of incorporation have been filed with the County Clerk and by-laws have been adopted. The contract for this year has been decided on. J. C. Nourse is president, W. A. Edgerly vice-president and F. M. Burnham secretary. The plan and objects of the new corporation are similar to those of the Raisin Growers' Association. Producers of dried fruit will be able to receive 75% of the market price of the product on delivery to the Association. The membership fee is \$2.50, and the directors are allowed to use not over 5% of the selling price of the fruit in their hands for the expenses of management.

RAISIN PRICES.—The directors of the Raisin Growers' Association will name prices on Sultan and Thompson Seedless for unbleached goods only. Any advance on this price for bleached goods will be subject to adjustment between the packer and grower, without reference to the Association. In regard to Valencias, a price will be made for standard ungraded and Pacific ungraded, and the advance for bleaching settled by mutual agreement between packer and grower, as in Sultan and Thompson's.

A SPEEDY GRAPE PICKER.—Sanger Herald: It may interest grape pickers in general to know that Harold Savage of Sanger, who is but 13 years old, has eclipsed the best record this season by picking 208 trays in one day, thus earning \$5.20 for the day.

HUMBOLDT.

LIGHT POTATO CROP.—Arcata Union:

Farmers on Arcata Bottom and along Mad river have had good luck not to be troubled with worms this year as they were last, nor did rust attack the grain. Potato crops are not depended on as they were years ago to yield good returns to the farmers. For reasons never yet satisfactorily explained, potato fields do not yield more than one-fourth of the crop of early farming days here. Besides, prices are often too low for profit, and blight, worms and other pests render the crop uncertain. Many of the crops on the bottom are now blighted, and it is doubtful if more "spuds" than are necessary for home consumption will be raised.

KINGS.

HIGH PRICES FOR HAY.—Hanford Journal: The price of alfalfa hay is advancing. We hear that none can be purchased now within 7 miles of Hanford, and that not only is all the hay of this county this year likely to be sold at good prices, but it may be necessary to ship hay in here. Alfalfa hay is now worth \$6.50 per ton in the stack. Among the reasons for this scarcity and high price of hay are the increase in the number of dairy cows and the amount of cattle brought here to pasture, and the demand for sheep feed, owing to drought on the plains; also, the scarcity of water in the People's ditch, owing to the break in the dam, which made the alfalfa growers one crop short this year.

LOS ANGELES.

POMONA FRUIT EXCHANGE.—Pomona Progress: The Pomona Fruit Exchange has selected the following as a board of directors for the ensuing year: H. J. Nichols, F. E. Adams, J. H. Graber, J. W. Hood, Mel Campbell, J. E. Crawford and D. A. Hawk. The new directors organized by choosing the following officers: H. J. Nichols, president; J. W. Wood, vice-president; J. H. Graber, treasurer; F. K. Adams, secretary and manager. This will be Mr. Adams' fifth year as manager. The annual report of the manager showed the total shipments of the past year to have been 101,437 boxes, which is about 60% of the crop of the previous year, owing to shortage of crop. But the returns to the orange growers were very satisfactory, being \$142,467, which is about \$7000 more than they received the previous year for a crop more than half as large again.

MENDOCINO.

BIG HOP PICKING.—Ukiah Dispatch-Democrat: Some record-breaking scores have been made this season in hop picking. On Saturday, at the Pitner place, Dan Layman picked 461 pounds and on Monday he ran up to 503 pounds. On Saturday Miss Tillie Weselsky picked 430 pounds at Arnold Ford's, and on Monday Kirk Ford, a High School boy, picked 453 pounds and on Tuesday 517 pounds at the Pitner place. Tillie Weselsky averaged over \$3 a day all last week, and this in spite of the warm weather, which interfered seriously with the work.

ORANGE.

APRICOT GROWER'S EXPERIENCE.—Santa Ana Blade: L. B. Fine had long entertained the belief that nothing would be nicer than a cement floor on which to place his dried apricots until such time as they would have to be sacked for shipment. Consequently, when preparations were being made for handling the last crop, a cement floor was included in the list. An examination of the apricots stored on the cement floor was made the latter part of last week, and to Mr. Fine's surprise it was discovered that a cement floor is the last thing on earth that a grower should think of for storing dried apricots. All the apricots on the bottom had become mildewed and consequently were worthless. The experiment cost Mr. Fine the loss of about 300 pounds of fruit, besides the extra work and cost of having to move them.

SAN JOAQUIN.

HEAVY SHIPMENTS OF POTATOES.—Stockton Independent: The reduction of freight rates from 75 cents a hundred to 55 cents to all points in Arizona, New Mexico and Texas, where large quantities of tubers are used, has made it possible for the local commission men to compete with Colorado and Nebraska in the produce line. It is estimated that over eighty-five carloads of potatoes and onions were sent out in the last five days.

TOKAYS NET GROWERS \$50 A TON.—Lodi Herald: The Eastern market for Lodi's table grapes continues brisk, with top notch prices prevailing. All the local fruit houses are rushed in getting off their orders and are working overtime. Growers of Tokay grapes who are selling at 75 cents per crate f. o. b. are averaging \$50 per ton net. Last year at this time from twenty to thirty cars of table grapes were leaving California daily for unrouted Eastern markets. This season every car is routed and the daily average is under ten cars oftener than it is above that

number. At this rate there is not one chance in a thousand of glutting the market.

SANTA BARBARA.

UNPROFITABLE MUSTARD CROP.—A Guadalupe dispatch says: The mustard crops, as a rule, are turning out badly, some barely paying expenses of harvesting. It is estimated that the average crop will fall under four bags per acre, which, if correct, will give an output of about 20,000 bags, when the usual yield on 6000 acres would reach between 70,000 and 80,000 bags. This year's product of this crop will barely yield cost of production.

SANTA CLARA.

INCREASING ACREAGE IN GARDEN SEEDS.—Mercury: The growers of garden seed are now in the midst of the harvest. In less than a fortnight the greater part of the crop will be sacked and ready for shipment. The yield in all parts of the county has been bountiful. Nearly 3500 acres of land are devoted to raising of seed in this county. Onions, carrots, lettuce, sweet pea, celery and salsify are the species principally produced. From present indications the seed growing acreage will next season be double its present extent, and this will be attributable to the abandonment of seed farms in other sections.

FRUIT DRIERS BUSY.—This is one of the busiest weeks of the year at Campbell. The drier is receiving upwards of 100 tons a day of prunes. Peaches and pears are still hanging on, apricot picking is in progress, and the drying ground and warehouse present a lively appearance. Out in the drying ground 300 tons of pits are being cracked and spread out to dry.

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: Shipments of Red Pears are being made to Eastern points.—The apple yield is going to be considerably lighter than early estimates.—Four-tier Newtowns are the rule this year. It is going to be easy to grade to that size.—H. H. Cowles has a seedling cling peach which promises to become a popular variety. Experts say it is equal, if not superior, to the celebrated Phillips cling.

SACRAMENTO.

PROFITS OF STRAWBERRY CULTURE.—Bee: In 1898 two Japanese brothers went into the business of strawberry raising on a large scale. They rented twenty acres of bare land from David Reese for a term of seven years at \$4.50 per acre per year. In 1901 they picked 16,300 cases of strawberries, and this year (1902) they picked 13,500 cases from the twenty acres, all of which averaged 95 cents per crate. This would leave a net profit for the two seasons of \$19,000. At the time the Japanese rented this land from D. Reese it was worth in the neighborhood of \$25 per acre. The lease, which has three years more to run, was sold to S. Nogirl for \$1450, which is considerably more than the value of the land unimproved.

SONOMA.

HIGH PRICE FOR COYOTES.—Herald-Tribune: On Saturday night of last week J. G. Caldwell succeeded in entrapping a coyote on the Dave Hopper ranch, a little over a mile south of Healdsburg. During the last two months Mr. Hopper has lost sixty-five sheep by these varmints and not long ago he offered Mr. Caldwell \$40 for the scalp of one of the animals. The coyotes are so cunning that it is only after a great deal of maneuvering one can be captured. John Ward, an owner of an adjoining ranch, paid Mr. Caldwell \$5, and he will receive the same amount from the county, making \$50 in all for one coyote.

RECORD AS HOP PICKER.—Santa Rosa Democrat: An Indian lad employed as a hop picker in Sampson B. Wright's hop yard, near town, picked over 300 pounds of hops from low poles on Tuesday morning.

SUTTER.

THE EFFECTS OF IRRIGATION ON PEACHES.—Independent: B. F. Walton of this county is now delivering to the cannery his crop of Phillips cling peaches. This variety has been developed in this county and their original size was a little larger than a good sized walnut, with bright color and excellent flavor. By irrigation the color and flavor have been preserved, and this peach, now being delivered by Mr. Walton, measures on an average 3 inches in diameter and will yield from 400 trees a little over fifty tons.

TULARE.

SOME FINE CATTLE.—Visalia Delta: George Hall shipped two carloads of fine beef cattle through this city last week from Porterville to San Francisco. There were fifty-five head and a finer lot of beef were never shipped from Tulare county. Among the fifty-five head there was one large steer that was purchased from the Woods ranch near Portersville that

weighed 1700 pounds. The animal was four years old and was raised as a pet by Mrs. Woods, and would respond any time when called "James G. Maguire," as that was the name given it when a calf. The steer brought just \$56 for Mrs. Woods, though as he was a pet she disliked very much to part with "Jimmie" at that price.

A GOOD GRAPE YIELD.—F. Giannini has twelve or fifteen acres of Malaga grapes on his place northeast of Tulare, in which there are peach trees also, but the yield is very large this year, the crop going, so far as harvested, at fully ten tons to the acre, and he has sold the crop at \$13.50 per ton.

VENTURA.

APRICOT PITS.—Santa Paula Chronicle: Apricot pits sell as high as \$12.50 a ton, but the demand for them is unreliable, and cannot be counted on at all from year to year. They are sold to go to Europe, and what they are used for there does not appear to be clearly known, even to the buyers, but they take the place in some way of almonds, when the latter are too costly for practical use. It used to be supposed they were used for extracts for flavoring purposes, but now it is thought they are used bodily to make almond paste. So when almonds are too high apricots are used as a substitute; when almonds are cheap enough they are preferred. In the former case there would be a big demand and a good price for apricot pits in the latter case none at all. So the condition of the almond crop is the best guide to the positive value of apricot pits, and if our growers will watch this they stand a chance to know as much about it as anybody. The preparation of the pits for shipment where they are in demand is a big industry, for only the meats are sent. They are cracked by machinery, but have to be separated from the shells by hand, and this latter is a slow job and takes lots of help.

GRADING APRICOTS.—Apricot harvesting is over, but not its packing and marketing. This will be attended to by the Santa Paula Commercial Co. in a manner calculated to command the highest possible rates. Apricots will no longer be shipped, at least so far as this company has anything to do with them, in bags, but will be graded the same as raisins, and like raisins, handsomely packed in boxes of convenient size, and sold with a Santa Paula label, under brands that will continue from year to year, and be a permanent guaranty of the character of the goods covered by them.

YOLO.

THE CURING OF ALMONDS.—Enterprise: Following is the method of handling almonds by the Davisville almond growers: "First, we all use the large tray, 3x6 feet. When the almonds are dry, sprinkle them with a fine spray. See that all the almonds on the tray are damp, not wet. Then put them upon the car and run them into your sulphur house. If Nonpareil or Neplus, sulphur them one and one-half hours; if I. X. L., Drake Seedling, Languedoc or Peerless, subject them to the sulphur fumes two hours; if Routier or Golden State, make them wet by sprinkling and leave them in three and one-quarter hours. By following this plan, will get a uniform bleach of a bright straw color. After you have bleached your almonds leave them stacked up from one and one-half to two days; then they are ready for the sack. In curing your almonds turn them over on the trays so the sun may do part of the bleaching. Do not attempt to bleach the nuts until they are dry, as uncured almond meats take on the sulphur and become rancid and unfit for use in nine to ten months. When sacked and ready for the warehouse see that the meats are cured and a little crisped and they will never mold."

YUBA.

DROP IN PRICE OF GRAPES.—Grape prices in the vicinity of Marysville are disappointing at the opening. For Zinfandel varieties \$15 is offered, against \$17 last season. The large crop is given as the cause.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or bluish.

Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland O.



THE HOME CIRCLE.

A Wonderful Boy.

We met in the midst of a dream;
But I'm waiting for him to come true!
The style of his nose I've completely forgotten,
But his eyes, I remember, were blue.

It was just 8 P. M. by the clock—
Which stood, I recall, on its head—
When his mother spoke up and said,
"Kiss me, my son,
And run away quickly to bed."

I thought that the next thing would be
Loud wrath and perhaps even tears;
But instead—well, I really give you my word
That I've not been so staggered for years!

For he mumbled, this wonderful boy—
(I can feel my astonishment yet!):
"It's a pity I can't go at seven, when you know
How tired and sleepy I get!"

I felt myself falling away—
In dreams chairs collapse without squeaking—
And when I came to the first thing that I heard
Was the voice of the fond mother speaking.

She was kind, she was patient, but firm,
And her calm words decided his fate:
"It is settled, my son, that a boy of your size
Must learn to sit up until eight."

I sat on the floor, and I stared
In a dazed way from one to the other.
Then I said, "You are truly a wonderful boy,
And the son of a wonderful mother."

—Frances Wilson in St. Nicholas.

"The House That Jack Built."

Jack Waring was bashful, but it was a question if he was any more bashful than Ethel Talcott. They could not speak to each other on even the most trivial subjects without stammering and blushing, but Jack persisted in calling, despite the apparent discomfort his visits caused both. Everybody could see that he was desperately in love, and it was a saying among their friends that if Jack could ever summon up the courage to propose, Ethel would be too bashful to refuse him, whether she loved him or not. She had just come out at the beginning of the season, about the same time that Jack, who had just graduated from college and entered his father's business, of which he was prospective heir, first began to attract the attention of designing mothers and attractive daughters. Perhaps it was while avoiding them that he met Ethel, who had found that there are ways of keeping out of sight when a ballroom was crowded with other girls who were enjoying themselves. Anyway, some common chord of sympathy made them embarrassed friends from their first meeting.

Although Jack was bashful, he called on Ethel as often as he dared, but in spite of all resolution to overcome his diffidence he made little progress with his suit. They could get along fairly well when there were others in the room with them, but when left to themselves they suffered. Unlike most young people in a similar case, they courted rather than avoided the company of Ethel's little brother, Gus, and Jack soon became such friends with him that he felt called upon to remember his birthday. This he did by sending him an elaborate box of building blocks, which Gus dragged into the parlor on the occasion of his next visit, and insisted that the donor teach him how to build with them.

"What shall I build?" Jack asked.
"Build me a big hotel like the one Ethel and I were at last summer."

Jack obediently drew his chair to the middle of the room and began on a suitable design. But he soon found that building while sitting on a chair was difficult, and as Gus was sprawled comfortably on the floor watching the work, he presently slipped down beside him. Now, it is a peculiar thing about building blocks that, although they are always bought for children, very few

children can work out the designs that go with them, and consequently they are forced to call on their elders to help them. Moreover, their elders usually take kindly to the task, and are apt to get cross if the child interferes in any way and delays the work in hand. In a very few minutes Jack was as deeply interested as if he were building a sure-thing hotel and Gus watched with admiration. Presently he tried to put in place an arch that was in two pieces and needed no other blocks to be placed beside it in order to keep it in place. Gus tried to hold the pieces in place, but in doing so he knocked a corner out of the building with his elbow.

"You clumsy boy!" exclaimed Ethel, who had been watching with the most intense interest. "Here—let me hold them," and a moment later she was sitting on the floor with them.

Jack patiently rebuilt the damaged corner and then Ethel held the arch until he had built around it.

"Now make some bathing houses on the beach," commanded Gus.

Jack obeyed, and then Gus brought out some men and women cut out of cardboard and set them around to represent the guests.

"Here's you and Ethel. I'll introduce you, for you weren't acquainted then," said the young rascal, as he placed the figure of a man raising his hat before that of a young woman with a parasol.

"All right," said Jack; "but I am not raising my hat at her as I should, I am raising it at the far corner of the building. Here, let me set them right."

Saying this, he reached out and turned the figure representing himself so that it faced the figure representing Ethel. Immediately a white hand shot out and turned the back of the pasteboard belle toward the bowing figure.

"Snubbed!" exclaimed Jack, having a boldness for his pasteboard representative that he never would have presumed to have for himself.

"But you don't know him yet. He's the cheekiest man on the beach, at heart;" and he moved his representative with his bow in front of the maid with the parasol.

"And she's the haughtiest girl at the beach," said Ethel, as she again snubbed her cavalier.

"Try them behind the hotel where the hammock is and folks ain't lookin'," volunteered Gus.

"Great head!" exclaimed Jack, picking up the two figures to make the change.

"Take care whom you're handling like that!" exclaimed Ethel, grasping him by the wrist and striving to pry his fingers loose from her figure.

There was a struggle full of the abandon gayety of the nursery, to which the block had brought them back far from the formalities and embarrassments of social life. Gus jumped into the struggle to help Jack, and in the general mix-up the hotel was wrecked worse than any house that was ever built on sand. The clatter brought them back to themselves again, but the nursery spirit remained with them. They once more had the frank fearlessness of children and could look one another in the face without blushing.

"Now, you must build me something else, you two," whined Gus, over the ruins of his hotel.

For an hour they built and rebuilt all kinds of houses to the infinite delight of the boy, who watched and criticised. At last they disagreed about what should be built.

"Let's build a cottage," said Jack.
"No, let's build a church," said Ethel.

"No, let's build both," said Gus.

So, as there were plenty of blocks to build both, they started a race to see who could finish first. But it was a peculiar thing that Jack built with his left hand and Ethel with her right, while each leaned on the hand that was supposedly disengaged. But an observer less interested in building than Gus might have noticed that the two hands not used in building were trying to rest on the same spot of floor, and occasionally the fingers intertwined in a way that brought the color to the

cheeks of the two young people, whose faces were carefully averted.

"Jack's cottage is done first," cried Gus, sprawling forward with his cardboard figures. "And here you both are going to the front gate."

"But we should go to the church before we go to the cottage," said Jack, gallantly. "Don't you think so, Ethel?"

A gentle squeeze of the hand was the only response.

"Then it is settled," he exclaimed, in a trembling voice, glancing at the back of an averted head. "First to the church and then to my cottage."

Another pressure of assent.

Just what would have happened next, in spite of the presence of Gus, will never be known, for her mother, who had entered the room unnoticed, suddenly exclaimed:

"Well, bless my heart, is this a nursery? Bless you, my children."

They both sprang to their feet in confusion, but Jack still clung to Ethel's hand. Her mother looked from one to the other, and then Jack managed to stammer:

"That's right—we want your blessing."

"Engaged!" exclaimed the mother. Well, I never. And that boy in the room all the time! Talk about bashful people!"

"Never mind that," said Jack, suddenly grown as bold as brass, as he planted his first kiss on Ethel's lips. "The question is, do we get the blessing?"

"You'll be able to tell better after you are married," said the mother, as she pushed them ahead of her toward the study, where her husband was sitting, pretending not to overhear.—P. M. Arthur in the Ledger Monthly.

Sore Throat.

Pain in the throat is the usual accompaniment of all acute throat inflammations. It is accentuated by swallowing or by use of the voice.

Sore throat is a term broadly applied to all the various degrees of discomfort of this region, from mere dryness and stiffness of the throat to states of acute pain, which may render swallowing well-nigh impossible.

A dry, burning sensation is the usual characteristic of pharyngitis—an inflammation of the region above the soft palate and behind the nose.

Acute, lance-like pains shooting upward toward the ear and down the neck usually accompany tonsillitis. When the tonsillitis is accompanied by the formation of pus—quinsy sore throat—the pain is throbbing, deep-seated and much increased by any muscular movement of the throat—such, for example, as is involved by swallowing, talking or chewing. The pain of laryngitis is sometimes severe, sometimes not and is always accompanied by hoarseness or huskiness, or even by "loss of voice."

A very dangerous form of laryngitis sometimes occurs in which more or less exudation into the tissues of this region takes place, and which may later proceed to pus formation. The danger lies in the possibility of the swelling of the vocal cords and adjacent regions becoming so marked as to stop respiration. In this form of laryngitis the pain is always extreme. It is usually absent in the early stages of diphtheria, but may become severe as the disease advances. The general prostration is more marked than in other forms of throat disorders.

Pain in the region of the throat, like that which may affect a limb or joint, is an indication that rest is needed. Singers, public speakers, teachers, auctioneers and others who use the voice almost constantly in their daily work should never ignore this symptom. Disregard of it has been the means of so increasing the congestion of the vocal cords as to set up permanent or chronic conditions extremely difficult, if not impossible, for the physician to overcome.

Dryness and pain are usually relieved by the continued inhalation of steam from a steam kettle.

The object of external remedies is the reduction of local congestion. Thus

counter-irritants are used, like mustard, camphorated oil or iodine. Gentle massage is also beneficial. Dry heat applied externally is often used in relieving pain.

In the severe forms of sore throat, however, these remedies are of little avail, and local blood letting from the membrane of the larynx and also externally must frequently be resorted to. Cases which involve obstruction to breathing require surgical measures.

Summer Cleaning.

For the hot weather cleaning, when all unnecessary exertion should be avoided, quick and easy methods of keeping the summer cottage in order are in demand by the practical housewife.

Use whiting or ammonia in the water for washing windows instead of using soap.

If the preserving kettle is stained after putting up the berries, and washing does not remove the brown streaks, use the kettle for boiling potatoes in their jackets.

Lemon and salt will remove stains from the fingers after peeling potatoes or working in the garden.

To keep tinware bright and shining, polish with newspapers occasionally. When frequently used the tin will require no polish beyond that given by the daily washing and drying.

It is well to remember that hot water will set grease stains in clothing. If grease is spilled upon aprons, or the white goods of the summer clothing become spotted with sewing machine oil in the making, wash out the spots with cold water before putting into the hot suds.

Blood stains are also quickly removed by soaking and washing in cold water before using hot water or soap.

Summer heat and dampness will quickly cause mildew at this season, and it is difficult to remove it from clothing. The best plan is to use a weak solution of chloride of lime—about a teaspoonful of lime to a quart of water.

To clean brass bird cages, wash in cold suds and sprinkle with whiting, then dry and polish with dry flannel and chamois.

To remove white stains and spots from furniture, rub them with spirits of camphor, then with flannel wet with linseed oil, and finally with dry flannel.

Her Shrimp Salad.

A very young and very inexperienced matron—a well known society woman of this borough—recently undertook to assume the entire management, even to the smallest detail, of her household affairs, and her directions to the servants are conveyed to them in writing. A few days ago, wishing to have some dainty dish for luncheon, she thought a nice shrimp salad would be the thing, and accordingly wrote her instructions to the cook to prepare the salad and for the purpose to order from the market man "one small shrimp." The story leaked out, and it will be many days before she will be able to look into the eyes of her friends without seeing the small shrimp twinkling therein.—New York Times.

"Your hair seems to be falling out," remarked the barber, briskly wielding the shears. "I think I can save it." "All right," said the customer. "Save it if you want to. I've got no use for it."

"Yes, Biggins is going to send his daughter across the water for her voice." "Thinks it will be cultivated in Europe?" "No; he's got an idea that maybe she'll lose it on the way."

"CASHLEY," said the politician, "is willing to subscribe to the principles of the platform." "Shucks," said the campaign manager. "Is he willing to subscribe to the campaign fund?"

PRISON VISITOR—"I notice that all the convicts have very clear complexions." Doctor—"That is owing to the simple fare. If we gave them rich food they might break out."

Ode on Solitude.

Happy the man whose wish and care
A few paternal acres bound,
Content to breathe his native air
In his own ground:

Whose herds with milk, whose fields with
bread,
Whose flocks supply him with attire;
Whose trees in summer yield him shade,
In winter fire:

Blest, who can unconcern'dly find
Hours, days, and years slide soft away;
In health of body, peace of mind,
Quiet by day:

Sound sleep by night, study and ease,
Together mixt, sweet recreation;
And innocence, which most doth please,
With meditation.

Thus let me live, unseen, unknown;
Thus, unlamented, let me die,
Steal from the world, and not a stone
Tell where I lie.

—Alexander Pope.

A Matter of Expression.

Nobody ever believed young Hayes was in earnest or angry or troubled for any cause whatever. He had a pair of laughing blue eyes whose only other expression was one of tenderness; he would approach you with a business proposition or some serious statement, and while he was going over the ground his eyes would twinkle and dance till serious attention was impossible, and the conference end in a laugh.

Of course he was engaged, and to the dearest girl in the world; he had looked her heart away in her first season, and equally, of course, there was no prospect of their being married because even the most exacting mamma in town, as the dearest girl's mother certainly was, stood out for a definite something be it ever so small, in the way of income before letting the young people fix a date.

It had been very nice to have Meta engaged in her first season, especially to such a winsome fellow as young Hayes, who had nice, caressing, respectful ways with the dowagers, paid them the little attentions the other men bestowed on the young married women, and was a good fellow generally. But now the engagement was an old story, and half a dozen girls who had not become engaged till the season after Meta were calling themselves "old married women" already.

Now, Meta was the most sensible, as well as the dearest girl in the world, and she knew that to love and be loved by Charley Hayes, who had neither money nor vices, was ever so much better than to marry some fellow with plenty of both. Still, she was a soft-hearted little soul, and dropped a small tear now and then after an expedition in search of a wedding present for some more fortunate couple.

The spring and fall weddings went as far as anything else to keep young Hayes poor, for no one gives silver any more, and those old things that clerks bring out and show you are dearer than diamonds. She would have made, she was sure, a very creditable housekeeper, and, to quote one of her aunts, who always brushed her hair smoothly back and turned her gowns, "kept strictly within her income." There wasn't any income to keep within.

Of course, young Hayes had enough to buy coats that were cut right, and never wore ready-made shoes, and, of course, the dearest girl's mother would have the third story done over and give it to them if it came to that, but Charley Hayes didn't think it would be the thing for a fellow who had a wife to let her go to her mother every time she wanted a gown.

So, even though his eyes twinkled and laughed, his heart was heavy.

He knew a fellow at New Rochelle who had been engaged to a girl seven years. He had seen them spend a whole afternoon on a yacht once and never say a word to each other, and he didn't want things to get like that between him and Meta. He was thinking of this in a sunny window at the Athletic Club, and turning over in his mind two or three ideas he had which struck him as rather good, when he heard a man he knew telling about a little box he had taken at Mamaroneck and what

good times he and his new wife were going to have.

Hayes determined to do something then and there, and made his way as fast as possible down to a number on Broad street, where a clever business man had an office. He put the two propositions before him concisely, and jotted down the figures with a pencil on a manila pad that lay on the desk. The business man followed the argument with attention till, looking up in interest at a clever point, he saw Hayes' blue eyes twinkling and laughing as if it was the best joke in the world.

"Well," he said, "before I looked at you I thought you meant it."

They started for Maiden Lane to see a man who had some lovely uncut diamonds. The ceiling of the man's place was being repaired, and as they passed through to the back office where the safe was some of the limey stuff the men were using splashed, somehow, into Hayes' right eye and burnt like fire.

They got him into a hansom and round to the hospital as fast as possible, and, of course, everything was done, but the lime worked quicker than the doctors, and when the dearest girl's mother let him see her there was a doleful black silk patch lined with green fastened round his head with a thin black elastic.

Her mother was very kind, and "would always be a friend to him, but as there was now even less prospect than ever of marriage, she was sure Mr. Hayes would see —" But here Meta managed to get in between them and got her arms around his neck and kissed the patch and then the well eye, and said she loved him twice as much as if he had two.

And he kissed her and choked a little, and asked her please to go away now, and she went and got out a picture of him she never used to like and took a girl out of a silver frame and fastened him in, and put him opposite the other one on her desk, and then went down toward Union Square and looked at the silver things, and wanted them for him, and cried a little.

She woke up the next morning feeling very constant and loyal indeed, and wrote young Hayes a very pretty letter announcing herself ready to wait forever, and was quite disappointed to receive a very prompt and business-like answer by night, saying she wouldn't have to wait six months, but that he should be busy in the meantime and would not be able to call very often.

Nobody saw much of young Hayes about that time, except a very clever but unknown young oculist, who had an office near Central Park. Then people began to see him about again, and after a little he reappeared one day at the office of his clever business friend, and resumed the conversation where it had been broken off at the time of his accident. He looked serious enough now, and laid the plans before the clever man clearly and well.

A month later he showed the same firm expression to the dearest girl's mother while he was telling of his new prospects. But the dearest girl did not seem entirely satisfied even if his arm was around her waist and an early date being fixed for their marriage. She got him off in a corner as soon as she could and said she did not like the serious-minded expression that he had developed.

"Now, Charley Hayes, that hateful little man did something awful to your eyes." Then, way up in G, "Charley, only one of them twinkles!"

"That's all right, darling," answered young Hayes, coolly, "I had to have a glass one put in, so I got them to make it with a good, determined expression, and you see it works to a charm for business. I'll use the other at home."

—New York News.

"MAMMA, what would you do if that big vase in the parlor should get broken?" said Tommy.

"I should whip whoever did it," said Mrs. Banks, gazing severely at her little son.

"Well, then, you'd better begin to get up your muscle," said Tommy, "coz papa's broke it."

DOMESTIC ECONOMY.

Cooking Fresh Fish.

During warm weather fish forms one of the best substitutes for meat and becomes naturally more important in the regular diet. To give it its full value two requisites are indispensable: The material itself must be fresh and in perfect condition, and skill must be manifest in the handling of the cook. The perishable character of the food and its delicacy of flavor and texture combine to give this emphasis to especial care and nicety in preparation to insure perfection in the result. With due attention the result in nutritive value, ease of digestion and assimilation and gustatory satisfaction amply repay the effort and make a larger use of one of the easy ways of meeting the changed demands of the system in torrid weather.

In cooking fish there is a discrimination to be made between the two general classes of fish—the finer kinds, as salmon, trout, smelts, shad and mackerel, in which perfection consists in giving the full flavor of the fish itself, and those commoner kinds of ordinary pond or sea fish, in which the light, digestible character of the food itself needs to be enhanced by additional piquancy of flavor. Rich or savory sauces of some kind add very greatly to the acceptability of all fish of this sort.

A boiled fish of inferior quality is decidedly improved by adding to the kettle of salted water in which it is plunged a handful of parsley, a bay leaf, a few pepper corns and sprigs of tarragon and thyme. A scraping of onion may be allowed, also, with the coarser fish, and a large spoonful of lemon juice, or best cider vinegar.

Such a fish is often better the second day, when it is stripped from the bones in neat flakes, the head and all trimmings added to the fish kettle and boiled down to make a stock, from which a white sauce is made in the usual manner. The fish is then arranged in layers with the sauce in a baking dish, lightly crumbed and buttered on top, and baked to a delicate brown.

Cress, radishes, olives and small cucumber pickles are appropriately offered with fish.

A fish of similar kind may be boned and baked to advantage. Cut it open and remove the backbone by inserting a knife carefully under it, picking out small bones as far as possible. Put it in a baking pan, skin side down, and bake until firm and browned, basting with melted butter. When partly cooked, a little salt and paprika sprinkled over it, with the juice of half a lemon, will much improve a fish of any tendency to muddy flavor.

Any savory sauce is in keeping with a baked fish. A mayonnaise dressing, mixed with a little horseradish, is good with any fish lacking flavor. A simple sauce delicious with baked or boiled fish consists of pure, sweet cream, rather thin, brought to the boiling point and seasoned with salt and paprika alone, or with other condiments.

Small fish of the best kinds, such as smelts and tiny brook trout, are best cooked by crushing or merely coating lightly with flour and plunging in deep fat in the frying kettle. It must be very hot, so that the surface is instantly hardened. A very hot frying pan, in which there is sufficient unsalted fat to almost float the fish, will serve almost as well. These small fish of finest quality must be cooked very quickly and crisply to be at their best.

In these days, when so much attention is paid to dainty effect in serving, these little fishes are arranged in quaint fashion, heads all in one direction, a little wreath on a circular platter, for instance, with a cone of potato ruffles beautifully browned in the center.

A largh trout is usually boiled and served whole in its own fine proportions upon a bed of cress or curled parsley. A sauce of real cream is one of the best to accompany it.

Eels, when dressed and cut in 2-inch lengths, may be marinated by lying for

two hours in a dressing of oil, vinegar, salt and cayenne. They are then crumbed and fried in very hot fat, or by some cooks dipped in coarse Indian meal instead of crumbing. This used to be a favorite coating for all kinds of pan fish, but it is now less in favor. Eels stewed in a rich broth make a dish which has been a favorite with epicures from time immemorial. The sauce consists of the broth in which they were cooked, highly seasoned, sometimes with the addition of port wine.

A mixture of equal parts of white wine and water is sometimes recommended for boiling a delicate fish. Perhaps more sensible as well as less luxurious practice favors the method of steaming over boiling water, instead of plunging into the kettle, as this better preserves all the juices and sweetness of a fine fish.—Country Gentleman.

Hints to Housekeepers.

Black bass with sweet pepper is an excellent summer dish. Split the bass, have backbone removed, season with pepper and salt, sprinkle with melted butter and broil. When serving have ready some sliced sweet Spanish peppers fried in oil, and with these garnish the fish.

As a change from the tomato sauce usually served with breaded lamb chops, try an onion sauce made in this way: Slice two, or if very small, three onions, and cook them in water for a few moments and drain. Put them into just enough boiling water to cover, add a little salt, and cook until tender. Cook together two tablespoonfuls each of flour and butter, and when perfectly smooth add one-half pint of stock, three or four tablespoonfuls of cream and one salt-spoonful each of salt and sugar and a dash of cayenne. When the onion is tender press it through a colander and add the water in which it has cooked.

The uses of cold rice cannot be enumerated. There are so many methods of transforming it into most attractive dishes that many housewives while preparing hot rice for the table cook a double portion and reserve it for various uses. A cup of rice is a pleasant addition to many hot breakfast breads. It may be made into delicious puddings, fritters, pancakes, mixed with a cup of cold tomato or even left-over tomato soup, well seasoned, sprinkled with cheese and buttered bread crumbs, and baked till brown, when it appears as a palatable entree.

Domestic Hints.

TOASTED SANDWICHES.—Often after a picnic or entertainment a housewife has a number of bread-and-butter sandwiches left, too stale to serve. They may form the basis of a bread pudding, or they make an attractive dish for breakfast, luncheon or supper in the shape of toasted sandwiches. Do not take them apart, lay them between the wires of a toaster and hold over a clear red fire. The butter will melt and the inside left soft, warm and buttered, with the outside a crisp, golden brown.

MACARONI CROQUETTES.—Two tablespoonfuls butter, four tablespoonfuls flour, one cup milk, yolk one egg, two cups chopped macaroni, two tablespoonfuls cheese, pepper and salt. If the macaroni is the remainder of a dish of tomato and macaroni or a well-seasoned cheese dish, it will be all the more tasty. Make a thick sauce from the flour, butter and milk, beat in the egg and cheese. Mix thoroughly, spread to cool, flour, egg, crumb and fry. Serve very hot with tomato sauce.

RIBS OF BEEF IN BELLEVUE.—After the ribs of beef are prepared cook them the same as for a la Bristed, adding several calves' feet. When the meat is well cooked remove it from the fire, strain the gravy, and clarify it. Pare the meat well and glaze. Have a jelly-coated mould sufficiently large to contain this, put it in, and fill the entire mould with jelly, leaving it on the ice till ready to serve. Unmould it on a large dish, garnish around with chopped jelly, and form an outside border of oblongs or triangles of jelly.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Sept. 17, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	68 1/2 @ 68 3/4	69 1/2 @ 69 3/4
Thursday.....	68 1/2 @ 69 1/4	69 1/2 @ 70 1/4
Friday.....	69 1/2 @ 69	71 @ 70 1/4
Saturday.....	69 1/2 @ 68 3/4	70 1/4 @ 69 1/4
Monday.....	68 1/2 @ 69	69 1/2 @ 70 1/4
Tuesday.....	68 1/2 @ 69 1/4	69 1/2 @ 70 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	31 1/2 @ 31 1/4	31 1/2 @ 31 1/4
Thursday.....	31 1/2 @ 31 1/4	31 1/2 @ 31 1/4
Friday.....	31 1/2 @ 31 1/4	32 @ 31 1/4
Saturday.....	31 1/2 @ 31	31 1/2 @ 31 1/4
Monday.....	31 @ 31 1/4	31 1/2 @ 31 1/4
Tuesday.....	30 3/4 @ 31 1/4	31 1/2 @ 31 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values on San Francisco Call Board for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 16 1/2 @ 17 1/4	\$1 19 @ 19 1/4
Friday.....	1 17 1/4 @ 16 1/2	— @ —
Saturday.....	1 16 1/2 @ 16 1/2	1 18 1/2 @ —
Monday.....	1 17 1/4 @ 18 1/4	1 19 @ 20 1/4
Tuesday.....	1 18 1/2 @ 17 1/4	1 19 1/2 @ 20 1/4
Wednesday.....	1 18 1/2 @ 18	1 20 1/2 @ 20 1/4

WHEAT.

Values have not fluctuated to any marked degree for spot wheat during the week under review, but the general tendency has been to more firmness, despite the predictions of bear operators that recent prices were higher than could be maintained or than were warranted by conditions abroad. Instead of wheat values being higher than justified, the reverse is shown to be the case, by comparing the situation with that of a year ago. California wheat, according to Liverpool quotations, has been lately 10c per cental higher in the English market than at corresponding time last year. Freight rates are 15 shillings per long ton lower than a year ago, equivalent to 15c per cental. The higher price in Liverpool and the lower freight rate show 25c per cental in favor of wheat, or which should be added to last year's price to preserve the same ratio. Adding this 25c to the price of a year ago and we have \$1 22 1/2 for shipping wheat, or about \$1.50 per ton above the recent market. If wheat was not too high a year ago, and no one claims that it was, then the values lately current here have been under instead of above warranted levels. This is accounted for to some extent by present freight rates not having been long in force, and by shippers having vessels chartered prior arrival at figures considerably above the spot market. With continued low freights, which are likely to be experienced, and with steadiness in foreign wheat values, which there is reason to look for, and possibility of more firmness, the local market for wheat should develop still more strength in the near future. Market closed strong for both spot and futures.

California Milling.....	1 17 1/2 @ 22 1/4
Cal. No. 1 shipping, alongside.....	1 15 @ 17 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
On qualities wheat.....	1 12 1/2 @ 15

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02	1902-03.
Liv. quotations.....	5s 11d @ 5s 11 1/2d	6s 4 1/2d @ 6s 5d
Freight rates.....	37 1/2 @ 38 1/2s	21 1/4 @ 22 1/4s
Local market.....	9 1/4 @ 1 00	1 16 1/4 @ 1 18 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.16 1/2 @ 1.18 1/2.
May, 1903, delivery, \$1.18 1/2 @ 1.20 1/2.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.18 1/2 @ 1.18; May, 1903, \$1.20 1/2 @ 1.20 1/2.

FLOUR.

There is a rather firm tone to the market, but no quotable improvement in values, although there should be, as there was no special profit in flour to millers at the figures current a year ago. Flour is not over 25c. per barrel higher than a year ago, while milling wheat is commanding fully 15c. per cental more than at corresponding data last year. Not less than 250 pounds of wheat are required for a barrel of flour, making the cost 37 1/2c. per barrel more than in 1901. The mill is

bringing a little more than a year ago, but hardly enough to make up for the difference above noted.

Superfine, lower grades.....	\$2 40 @ 2 50
Superfine, good to choice.....	2 60 @ 2 90
Country grades, extras.....	3 15 @ 3 35
Choice and extra choice.....	3 35 @ 3 65
Fancy brands, jobbing.....	3 65 @ 3 75
Oregon, Bakers' extra.....	2 90 @ 3 25
Washington, Bakers' extra.....	2 90 @ 3 40

BARLEY.

The strength which has been lately developed in the market for this cereal has been beyond the expectations of a large majority of those who, during the entire season, have had faith in barley and who have been operating on the hull or buying side. Especially is the strength of the market for feed barley extraordinary. The advances recently established in prices for brewing and export grades have been largely due to the upward movement in values for feed descriptions. Good qualities of feed are now commanding more than was paid for much of the export barley which changed hands early in the season. Recent shipments of Chevalier to Australia have reduced stocks of this description to rather small proportions.

Feed, No. 1 to choice.....	1 05 @ 1 07 1/2
Feed, fair to good.....	1 02 1/2 @ 1 05
Brewing, No. 1 to choice new.....	1 07 1/2 @ 1 12 1/2
Chevalier, No. 1 to choice.....	1 35 @ 1 50
Chevalier, common to fair.....	1 12 1/2 @ 1 25

OATS.

Prices continue on a low plane, especially as compared with values ruling for barley and corn. Owing to the tolerably heavy carry over stocks, and to a good yield from an increased acreage this season in this State, as also in Oregon and Washington, the market is not apt to develop much strength in the near future.

White Oats, fancy feed.....	1 20 @ 1 22 1/2
White, good to choice.....	1 12 1/2 @ 1 17 1/2
White, poor to fair.....	1 05 @ 1 10
Gray, common to choice.....	1 05 @ 1 15
Milling.....	1 17 1/2 @ 22 1/2
Surprise, good to choice.....	1 20 @ 1 25
Black Russian.....	95 @ 1 20
Red.....	97 1/2 @ 1 17 1/2

CORN.

Supplies are too limited to admit of much trading in this cereal. Values are being maintained at much the same figures as last quoted, but there is no disposition to stock up extensively at current rates. Recent business has been more for shipment than on local account.

Large White, good to choice.....	— @ —
Large Yellow.....	1 42 1/2 @ 45
Small Yellow.....	1 45 @ 1 47 1/2

RYE.

Present offerings are not particularly heavy, and little or no disposition shown to crowd stock to sale at concessions.

Good to choice.....	87 1/2 @ 92 1/2
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BUCKWHEAT.

Same activity as previously noted is still prevailing, with poor prospects of any special change in the near future.

Good to choice.....	1 55 @ 1 70
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BEANS.

As new crop beans are beginning to arrive in wholesale fashion from Sacramento river section, and have also put in an appearance in a small way from the southern district, buyers are endeavoring to scalp prices, but they are not meeting with as much success in this respect as they would like to have appear. There is a very good demand for beans, speculative and otherwise, and there is little or no probability of values receding to very low levels this season. Operators in not a few instances are quoting lower prices than they are paying.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 25 @ 2 45
Lady Washington.....	2 20 @ 2 30
Pinks.....	2 00 @ 2 15
Bayos, good to choice.....	2 75 @ 3 00
Reds.....	2 25 @ 2 50
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 75 @ 3 85
Black-eye Beans.....	3 50 @ 3 60
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

New crop dried peas, both Niles and Green, are beginning to arrive from the southern section. Some Green from Monterey county went at \$1 40, and the quality would have to be particularly desirable to command any marked advance on this figure. For new Niles or white peas the outlook is more promising, choice being quotable at \$1.80, and a slight advance on this figure might be realized for very select stock.

Green Peas, California.....	1 40 @ 1 50
Niles Peas.....	1 80 @ —

WOOL.

Most of the business is being done in the interior, and this is likely to be the case during the balance of the season. While higher quotations than below given are not warranted for this center, some pur-

chasing is being done in the country at relatively better prices. Firmness continues to be experienced in Eastern and foreign markets. There is a fair movement outward of both scoured and grease wool.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

New crop hops are arriving in moderate quantity, but not so freely as at corresponding date last year. Neither are they selling so readily as a year ago, buyers not taking kindly to present asking prices. Wholesale values are at present largely nominal at 20@23c for good to choice 1902 hops. Although growers are asking more money, it is doubtful if above figures could be readily realized at this date for any great quantity. New York advices give the following concerning the market: "The new season has barely opened as yet. Some Humphreys Seedlings are coming in that cost about 31@32c in the State, and they are going to brewers at some advance over cost. No business to speak of in 1901 hops; remaining stocks are light and if wanted buyers would have to pay about 25c for anything desirable. Further transactions are reported in old olds, and a number of lots have been picked up in the country. The samples shown are of varying quality, with a good deal of mold in some lots, while others show only a sprinkling of it. Picking in this State is well under way, the fear of damage to the crop inducing growers to hurry forward the harvest. England is still buying German hops at a cost of 21@22c laid down in London for the new crop and 8c for olds. The amount of the English crop is quite uncertain. Conditions in Germany continue as heretofore; quality will be fine and quantity as large as previously stated."

HAY AND STRAW.

Under decreased arrivals of hay, dealers have advanced asking rates 50c@51 per ton on all grades of stable hay, prices for cow hay remaining practically unchanged. As very little hay is coming forward on consignment, it is no difficult matter to maintain the advance noted, under an agreement to that effect between the different dealers. There is no scarcity of hay, however, and conditions are not favorable for the exertion of much selling pressure.

Wheat, good to choice.....	10 50 @ 13 00
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 10 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 00
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 00
Straw, 3 bale.....	37 1/2 @ 45

MILLSTUFFS.

Prices for mill offal continue at a high range, with stocks and offerings of limited volume and in few hands. Further advances are noted in quotations for Rolled Barley, with market strong. Milled Corn is moving in a small way at unchanged figures.

Bran, 1/2 ton.....	20 00 @ 21 00
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 00 @ 22 50
Barley, Rolled.....	22 00 @ 24 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Business in the different seeds quoted herewith is not showing much life at present, stocks of most varieties being too limited to admit of any noteworthy trading. Values are not clearly defined, in consequence of the prevailing inactivity.

Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 25 @ 3 50
Mustard, Trieste.....	2 75 @ 3 25
Canary.....	4 @ 4 1/4
Rape.....	1 1/4 @ 2
Hemp.....	3 1/4 @ 3 1/2

BAGS AND BAGGING.

Market throughout is quiet. The Grain Bag season of 1902 is virtually ended, and the campaign for coming year has not yet opened, although there will likely soon be some trading in futures. Owing to the stiffness of the cotton market, Fruit Sacks are being firmly held at old figures.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	5 1/2 @ 6 1/4
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 6

San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6 1/4 @ 7
Fruit Sacks, Jute.....	7 @ 7 1/2

HIDES, PELTS AND TALLOW.

Current values for Hides, both Dry and Wet Salted, are being well maintained, with demand good. Pelts are in fair request at steady rates, the same as have been ruling for some weeks past. Tallow is meeting with prompt custom at full rates.

HONEY.

There are no heavy quantities on market, but there is more offering than immediate custom can be found for at full current figures. Retailers are as a rule taking hold very sparingly. Moderate quantities of Extracted are being forwarded outward. A sailing vessel clearing this week for Liverpool with mixed cargo took 70 cases honey.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	5 1/2 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	12 @ 13
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/2

BEESWAX.

Market is lightly stocked and firm. More than is offering could be readily placed at prevailing rates.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Market for Beef has developed no special change the past week, being moderately firm at previous quotations, with demand fair and supplies not particularly heavy. Mutton is changing hands in about usual quantities for this time of year, and no changes to record in values. Veal is arriving more freely than for some time past and market is easier. Lamb is not in heavy receipt and is selling to fair advantage. Hog market is firm for medium sizes, and large are bringing tolerably good figures, but small hogs are arriving too freely, these meeting with a weak market.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1 lb.....	7 @ —
Beef, second quality.....	6 1/2 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/2
Hogs, hard grain fed, 125 to 250 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 250 lbs.....	6 1/2 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 1 lb.....	8 @ 9 1/2
Veal, large, 1 lb.....	7 @ 8 1/2
Lamb, spring, 1 lb.....	9 @ 9 1/2

POULTRY.

The market has been in fair shape for the selling interest the greater part of the current week, with some changes, however in conditions and values. Contrary to the general rule, Old Chickens were most sought after and sold relatively to best advantage. The cause for this change was that recent importations from the East have been mainly young fowls. Not many Turkeys nor Ducks were necessary to satisfy the demand for these kinds. Geese were in poor request. Old Pigeons moved slowly and were lower, while market for Young inclined in favor of sellers.

Turkeys, dressed, choice.....	— @ —
Turkeys, alive, choice young.....	18 @ 19
Turkeys, alive, Hens, 1 lb.....	16 @ 17
Turkeys, alive, Goshawks, 1 lb.....	16 @ 17
Hens, California, 1/2 dozen.....	5 00 @ 6 00
Roosters, old.....	5 00 @ 5 50
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	3 50 @ 4 00
Broilers, large.....	3 50 @ 4 00
Broilers, small to medium.....	3 00 @ 3 50
Ducks, old, 1/2 dozen.....	2 50 @ 3 00
Ducks, young, 1/2 dozen.....	2 50 @ 3 00
Geese, 1 pair.....	1 25 @ 1 50
Goslings, 1 pair.....	1 25 @ 1 50
Pigeons, old, 1/2 dozen.....	1 00 @ 1 25
Pigeons, young.....	1 50 @ 1 75

BUTTER.

Small sales of select creamery were made at 30@31c, but these figures were not warranted as wholesale quotations, as the same quality of butter was offering to large buyers at 29@29 1/2c, and failed to clean up at these figures. While prices for best fresh are being maintained at a tolerably high range, the market is by no means firm. Holders of cold storage supplies are anxious to unload, having little confidence in the future of the market. A number of cows have already calved in the middle and southern counties.

Creamery, extras, 1 lb.....	29 @ 30
Creamery, firsts.....	26 @ 27 1/2
Dairy, select.....	26 @ —

Dairy, firsts.....	24	@25
Dairy seconds.....	20	@22 1/2
Firkin, good to choice.....	20	@22 1/2
Mixed store.....	17	@18
Pickled Roll.....	21	@23

CHEESE.

Demand is not very active at full current values and is mostly of a light jobbing character. Mild-flavored new of rich body is most in favor and is in lightest supply. Several carloads of Nevada cheese have been recently landed on this market. Eastern is in fair supply, but is being quite steadily held, costing about 13 1/2 c. laid down in this center.

California, fancy flat, new.....	11 1/4 @12
California, good to choice.....	10 1/4 @11
California, fair to good.....	— @—
California, "Young Americas".....	11 1/4 @13

EGGS.

Market is very poorly stocked with choice to select fresh, and on eggs of this sort sellers had much their own way as to prices. Sales were reported of small quantities of extra fancy stock up to 36c., including city delivery. Of other eggs, however, there was no scarcity. Eastern are arriving at the rate of three to four cars per week. Cold storage eggs are in liberal supply and are being offered freely at easy figures.

California, select, large, white and fresh.	34 @—
California, select, irregular color & size.	27 1/4 @32 1/4
California, good to choice store.....	23 @26

VEGETABLES.

Many of the Summer vegetables are showing reduced receipt and also a falling off in quality, this being notably the case as regards Corn, Peas and Beans. There were continued free arrivals of Tomatoes and prices for same were at a rather low range. Onions were in good request for shipment, and prices were well sustained at the range quoted.

Beans, Lima, # lb.....	2 1/4 @ 3 1/4
Beans, String, # lb.....	1 1/4 @ 2 1/4
Beans, Wax, # lb.....	2 @ 3
Cabbage, choice garden, # 100 lbs.....	50 @ 65
Corn, Green, Alameda, # crate.....	75 @1 25
Corn, Green, # sack.....	50 @1 00
Cucumbers, # large box.....	30 @ 50
Egg Plant, # large box.....	40 @ 75
Garlic, # lb.....	1 1/4 @ 2
Onions, Yellow Danver, # cental.....	55 @ 65
Okra, Green, # box.....	30 @ 60
Peas, Sweet garden, # lb.....	2 1/2 @ 3 1/4
Peppers, Green Chile, # box.....	35 @ 60
Peppers, Bell, # box.....	35 @ 60
Summer Squash, Bay, # large box.....	30 @ 50
Tomatoes, River, # large box.....	25 @ 50

POTATOES.

Free shipments of carload lots to Texas and Arizona, at the reduced freight rates lately in force, have caused the market to rule firm at the quoted range, but there is little probability of prices soon ruling materially higher, as existing conditions East do not warrant the payment of stiffer figures here. Sweeters are now in very fair supply, principally from Merced section, and market is inclining in favor of consumers.

Burbanks, Salinas, # cental.....	90 @ 1 15
River Burbanks, good to select, # cental.....	40 @ 65
Early Rose.....	— @—
Garnet Chile.....	— @—
Sweet Potatoes, # cental.....	1 50 @ 2 00

The Fruit Market.

FRESH FRUITS.

Arrivals of some kinds of fresh fruits were on the decrease, notably of Pears, Peaches, Plums and Nectarines. The latter were hardly quotable in a regular way. Quotable values for Pears, Peaches and Plums were without radical change, but the market showed improved tone, desirable qualities selling mainly at full figures, and some fine shipping stock bringing an advance on quotations. Apples were in liberal stock, with demand not very brisk, and for the ordinary run of offerings or other than the most select qualities the market could not be said to show any special firmness. Grapes made a good display, both as to quality and quantity. Prices for table grapes showed little change. The tendency on wine grapes was to firmer figures than previous week. Melons were not in very heavy receipt, but the weather being cooler, the demand was less active and market was easier. Berries arrived rather sparingly, but the inquiry was somewhat limited, and quotable values remained close to the figures of preceding week.

Apples, # fancy, 4-tier box.....	90 @ 1 10
Apples, good to choice, # 50-lb. box.....	60 @ 75
Apples, common to fair, # 50-lb. box.....	30 @ 50
Apricots, Royal, # crate.....	— @—
Cantaloupes, # crate.....	75 @ 1 50
Crabapples, # small box.....	40 @ 75
Blackberries, # chest.....	2 0 @ 4 00
Raspberries, # chest.....	6 00 @ 8 00
Figs, 1-layer box, 40 @ 65c; 2-layer.....	65 @ 1 25
Grapes, Fontainebleau, # crate.....	25 @ 50
Grapes, Isabella, # crate.....	50 @ 75
Grapes, Muscat, # crate.....	31 @ 70
Grapes, Black, # crate.....	30 @ 65
Grapes, Seedless, # crate.....	50 @ 75

Grapes, Tokay, # crate.....	40 @ 75
Grapes, Zinfandel, # ton.....	25 00 @ 28 00
Grapes, Rose Peru, # ton.....	20 00 @ 25 00
Grapes, Tokay, # ton.....	14 00 @ 16 00
Nutmeg Melons, # box.....	30 @ 65
Peaches, # box.....	25 @ 75
Peaches, # basket.....	15 @ 25
Pears, Bartlett, No. 1, 40-lb box.....	60 @ 85
Pears, common, # box.....	25 @ 50
Plums, choice large, # box or crate.....	30 @ 50
Plums, small, # box.....	15 @ 30
Prunes, Tragedy, # crate.....	25 @ 50
Strawberries, Longworth, # chest.....	6 00 @ 9 00
Strawberries, Large, # chest.....	3 00 @ 5 00
Watermelons, # doz.....	1 00 @ 3 00
Whortleberries, # lb.....	5 @ 6

DRIED FRUITS.

Quotable values and the general tone of the market for cured and evaporated fruits remain much the same as noted in last review. Aside from some shipments by sea to Europe, mainly of Apricots, there has not been much outward movement in dried fruit during the current week, but a fair trade on local account, mainly in choice to select qualities, which are in better request at extreme quotations or higher than are common qualities at the lower figures current on the latter. Especially was there good inquiry for high-grade Apricots, with market for same firm at the quotations, and for particularly desirable lots the realization of a moderate advance on extreme figures quoted was possible. Apples ruled steady, with no heavy offerings, and demand not particularly brisk at full figures quoted. Peaches were rather quiet, with offerings mostly of common grade, while inquiry was largely for fancy stock. Chinese cured were quoted in carload lots at 3 1/4 @ 4c. at primary points for good to fairly choice, while extra large and in every way fancy stock was quotable up to 7 1/2 @ 8c., there being very little of this sort obtainable. Pears are offering much more freely than was generally anticipated prior to the opening of the season. With Pears as with Peaches, however, the samples being presented for sale do not include much of superior quality, and only for choice to fancy halves is there disposition shown to bid up on Pears to any great extent. Pears of exceptionally high grade would likely command above top quotations. Figs are ruling steady, and although the pack promises to be large, the quality this season is above the average, so there is little likelihood of the demand at prevailing reasonable figures not proving sufficient to absorb all offerings of prime to choice. The Prune market is quiet at unchanged quotations, 2 1/2 @ 2 3/4 c. for the four sizes, 1/2 @ 3/4 c. premium for 40-50s, the higher figures being for Santa Claras, although it is claimed a few Santa Claras are being offered on the 2 1/2 c. basis.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/2 @ 6
Apricots, Moorpark.....	6 1/4 @ 8
Apricots, Royal, good to choice, # lb.....	5 @ 6
Apricots, Royal, fancy.....	6 1/4 @ 6 1/2
Nectarines, # lb.....	4 @ 4 1/2
Peaches, unpeeled, choice.....	4 1/2 @ 5
Peaches, unpeeled, fancy.....	5 1/2 @ 6 1/2
Pears, halves, fancy.....	6 @ 7
Pears, halves, choice.....	4 1/2 @ 5 1/2
Pears, halves, fair to good.....	3 1/2 @ 4 1/2
Plums, Black, pitted.....	4 @ 5
Plums, Red and Yellow.....	5 @ 6
Prunes, Silver, good to fancy.....	3 1/2 @ 6
Prunes, in bags, 4 sizes, 2 1/4 @ 2 1/2 c; 40-50s, 4 @ 4 1/2 c; 50-60s, 3 1/4 @ 3 3/4 c; 60-70s, 3 @ 3 1/4 c; 70-80s, 2 1/2 @ 3 1/4 c; 80-90s, 2 @ 2 1/4 c; 90-100s, 1 1/4 @ 1 1/2 c.	

COMMON SUN-DRIED.

Apples, sliced.....	4 @—
Apples, quartered.....	3 1/2 @—
Figs, White, in bulk.....	3 1/4 @ 3 1/2
Figs, 10-lb. box, 1-lb. cartons.....	30 @ 60
Figs, Black, in sacks, # lb.....	2 1/4 @ 3
Peaches, unpeeled.....	— @—
Pears, prime halves.....	— @—
Plums, unpitted, # lb.....	1 1/4 @ 2 1/4

RAISINS.

New crop Raisins have put in an appearance, but prices have not yet been named. The few deliveries which have been made are subject to prices to be established in the near future. It is announced that association rates for this year's raisins will be officially set forth the coming week.

CITRUS FRUITS.

Oranges are offering in moderate quantity, late Valencias and Seedlings, with asking prices practically the same as last quoted. The demand is not extensive, the abundance and cheapness of other and more reasonable fruit interfering with the movement. Lemon market has been quiet the current week at quotably unchanged figures, although lacking in firmness. Limes have been in light stock and have been more firmly held in consequence, but a fresh invoice from Mexico is about due.

Oranges, Late Valencia, # box.....	2 00 @ 4 00
Seedlings, # box.....	1 00 @ 2 00
Lemons—California, select, # box.....	3 00 @—
California, good to choice.....	1 75 @ 2 75
California, common to fair.....	1 00 @ 1 50
Limes—Mexican, # box.....	5 00 @ 5 50

NUTS.

Association prices for new crop Walnuts are announced at 10c. for soft shell and 9 1/2 c. for standard, in carload lots f. o. b., Los Angeles. The Almond market is ruling steady and business is of fair volume. Peanuts are quotably unchanged, with stocks only moderate, but sufficient for the immediate demand.

California Almonds, shelled.....	16 @ 20
California Almonds, paper shell, # lb.....	11 @ 12
California Almonds, soft shell.....	8 1/2 @ 9 1/2
California Almonds, hard shell.....	5 @ 6
Cal. White Walnuts, No. 1 soft shell.....	11 @ 11 1/2
Cal. White Walnuts, No. 2 soft shell.....	— @—
Cal. White Walnuts, No. 1 hard shell.....	— @—
Cal. White Walnuts, No. 2 hard shell.....	— @—
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2

WINE.

There is no trading of consequence in the wholesale wine market, in fact, scarcely anything offering from first hands. Dry wines of last season's vintage remain quotable nominally at 20 @ 25c per gallon, with higher figures possible for selections. In August the outward movement by sea from this port was 307,715 gallons and 280 cases, valued at \$105,630. For same month last year the shipments by sea, exclusive of those to the Hawaiian Islands, footed up 151,115 gallons and 360 cases, value \$54,150. Wine Grapes are selling at fully as wide a range as previously quoted, prices for sweet wine grapes running from \$12 @ 20 per ton, as to kind, the inside figure being for second crop Muscat and Tokay culls, the higher figure for choice white. The range on dry wine grapes may be said to be \$20 @ 26 per ton for red and \$25 @ 30 per ton for white. A Santa Rosa telegram says: "An important meeting of grape and wine men was held Saturday at Healdsburg. The Wine Association announced it would pay \$22.50 a ton for grapes this season, and, in addition, meet any advance made by a concern handling 500 tons or over. Although they will not recognize the competition of the smaller buyers, it is generally thought the ruling price will be about \$25."

California Dried Fruit at New York.

NEW YORK, Sept. 17.—Evaporated apples, common, — @ — c; prime wire tray, — @ — c; choice, — @ — c; fancy, — @ — c. New, 6 @ 8 1/2 c. California Dried Fruits.—Offerings of new crop are on the increase, but demand is good, and current values are being fairly well maintained. Prunes, 3 1/2 @ 7 1/2 c. Apricots, boxed, 7 1/4 @ 10 1/4 c; bags, 6 1/4 @ 10 c. Peaches, unpeeled, 7 @ 10 1/4 c; peeled, 12 @ 16 c.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	1,352,691	1,249,264
Wheat, centals.....	1,090,194	696,967
Barley, centals.....	1,721,613	1,169,003
Oats, centals.....	28,227	107,419
Corn, centals.....	2,001	11,514
Rye, centals.....	1,005	6,355
Beans, sacks.....	5,580	45,126
Potatoes, sacks.....	27,858	247,093
Onions, sacks.....	8,761	54,648
Hay, tons.....	3,571	49,217
Wool, bales.....	1,675	14,624
Hops, bales.....	60	217

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	103,272	967,892
Wheat, centals.....	492,494	1,006,689
Barley, centals.....	91,406	1,223,768
Oats, centals.....	635	7,724
Corn, centals.....	1,061	9,124
Beans, sacks.....	275	3,655
Hay, bales.....	4,699	29,533
Wool, pounds.....	—	316,507
Hops, pounds.....	1,059	4,770
Honey, cases.....	214	619
Potatoes, pack's.....	938	14,316

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THE VETERINARIAN.

Milk Fever.

By MR. J. C. ROBERT, Veterinarian of the Mississippi Experiment Station.

Parturient paralysis, parturient apoplexy, or "milk fever" is the name applied to the disease peculiar to cows seen at or about the time of calving. The disease is one especially to be dreaded because it occurs only in deep milkers at the prime of life, and has usually resulted in death. The name "milk fever" is misleading since there is no fever when the disease is uncomplicated, but frequently a subnormal temperature.

CAUSE.—The pathology of this disease is not well understood. Many theories concerning its production have been advanced, the latest and most rational of which is that given by a Danish veterinarian, J. Schmidt, which is as follows, viz.: that the disease is due to a poison generated in the udder and absorbed by the system. The sudden increased flow of milk incident to birth of the calf results in casting off into the milk channels great quantities of glandular cells. These decompose, form poisons, are absorbed into the circulation, permeate the tissues, and produce auto-intoxication. The toxic effect of this poison is especially manifested by the nervous system resulting in paralysis, hence the name, parturient (at the time of birth) paralysis.

SYMPTOMS.—These usually occur from a few hours to three or four days after birth of the calf, (in rare cases a few weeks after calving), and, as a rule, follow an easy and rapid delivery. The symptoms are mainly those of nervous disturbance. At the onset of the disease the cow becomes excited, she moves around the lot or pasture as if in pain; may lie down and then get up immediately, turn head to side, and kick at flank; groans, and grinds her teeth. Latter, she loses control of her muscular power as seen in dragging the hind legs, staggers, lies down and rises with great difficulty, finally becomes so paralyzed that she cannot rise at all. When down she usually rests upon her chest with head turned to the side or flank, but she may stretch her head out straight. The bowels and urinary bladder are more or less paralyzed, resulting in a torpid condition of intestine and retention of urine. Later, loss of reflex motion occurs, so that the eyeball may be touched with the finger and she may not close the lid. The pharynx and gullet are unable to take food to the stomach, so that an effort to drench the cow is apt to result in death, by the liquid entering the lungs and producing broncho-pneumonia from irritation of the bronchial tubes or possibly, producing immediate suffocation and death. As the stomach and intestines are paralyzed, the food may ferment and cause the animal to become bloated. The pulse is rapid and weak (60 to 120 per minute), respiration labored, and temperature about normal (100.5° to 102° F.), in some cases the temperature is sub-normal.

TREATMENT.—Preventative: Since parturient apoplexy is almost invariably confined to deep milkers at time

of parturition, our efforts should be directed towards lessening the activity of the udder at that time. This may be done by scanty feeding for a few days before she calves. If the cow is on a rich pasture, change her to a poor one. Cows kept on rich pastures seem just as subject to the disease as those that are stall-fed. We should see that the bowels are not constive. This condition may be obviated by giving daily a little laxative food, or giving one-fourth or one-half dose of Epsom salts.

It is very important that the cow have sufficient exercise, and it would be quite a mistake to confine her in a stable waiting for her to calve. Since the disease seems to be produced by an absorption into the general circulation of decomposed, cast-off glandular cells, it would appear quite rational to milk out the udder thoroughly two or three times daily just before calving, especially when a cow seems predisposed to the disease. We have never tried this but some practitioners have, and they report good results. We have, however, had good results by restricting the diet and giving sufficient exercise.

Curative treatment: But few diseases probably, have given rise to the use of so many drugs as this one. Many cases have been aggravated and some killed by internal medication. Schmidt's treatment, based upon his theory of its cause, is to infuse into each quarter of the udder a solution of iodide of potash. The idea of this infusion is to neutralize the poison and temporarily lessen the activity of the udder. This seems to be the effect of the potash, which has, in the majority of cases, been followed by speedy recovery. We have not had extensive experience with Schmidt's treatment, but sufficient to convince us of its efficiency; and it has proven by far the best we have ever used.

This treatment is in details as follows: Wash the udder and teats of the animal, also hands of the operator with soap and warm water, so as to remove all dirt and trash. After this wash especially the orifice of the teats with some strong antiseptic, say a 5% watery solution of creolin or carbolic acid. From two to three drams of iodide of potash (depending upon the size of the cow) are dissolved in one quart of boiled water that is perfectly clear. It is better to use distilled water if you can secure it. This solution is infused into the udder by means of a small glass funnel, to which is attached one end of a rubber tube of sufficient length and one-eighth of an inch in diameter. The other end of the rubber is attached to an ordinary milk tube. Before using, the funnel, tube, and rubber should be sterilized by placing them in cold water and boiling. Milk each teat carefully so as to remove all milk from the udder, and then insert the milk tube into the teat and pour in the fluid having it about the temperature of the body; first, hold the funnel on a level with the teat while filling it, then elevate funnel so that the potash solution flows into the udder. Use one-fourth of it in each quarter of the udder. Rub the udder for ten or fifteen minutes, and in about an hour milk all out that can be removed. If necessary, this treatment may be repeated in from eight to twelve hours.

In addition to the iodide of potash treatment, we should place the cow upon a comfortable bed of straw, rub the feet, legs and back to excite free circulation of the blood. Inject warm water containing four to six ounces of glycerine into the lower bowels to move them. If the cow is down and cannot rise, remove the urine every eight hours by means of an ordinary

large soft rubber catheter. The catheter, guarded by the index finger, is passed along the floor of the vagina, where we find a small opening about 4 inches from the vulva which leads into the bladder. If the cow can swallow well, we should drench with from one to one and a half pounds Epsom salts combined with three ounces of ground ginger. When the cow cannot swallow some advocate passing a 3-inch rubber hose about 7 or 8 feet long, after oiling it, down the gullet to the stomach and then pouring in the drench. Do not try to drench when the cow is paralyzed, as some of the liquid will enter the lungs and sooner or later result in death. The constipation, we think, is of comparatively minor importance, so you should never try to drench when the disease has reached the stage of paralysis.

If the cow becomes bloated sufficiently to interfere with the breathing, the paunch should be punctured (on the left side at a point equally distant from the last rib, hipbone and backbone) with a trocar and canula. Use great care in disinfecting the instruments and skin of animal, and in withdrawing the instrument hold the skin firmly against the abdominal muscles. The hypodermic use of such drugs as caffeine, strychnia, eserine, and pilocarpin give good results in some cases.

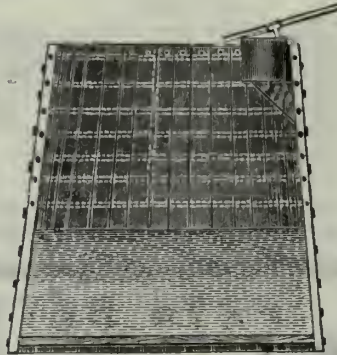
Within the last few weeks I have had four cases of parturient paralysis, treated them with Schmidt's treatment with result of a rapid recovery of three. Two of the cases that recovered were completely paralyzed before seen by me; two of them received one infusion of iodide of potash, one received two infusions of this drug and recovered; one died before the second infusion was made.

Dr. Leonard Pearson, of Pennsylvania, sent out circular letters to a number of veterinarians in reference to this subject and showed that 75% of the cows treated by the iodide of potash solution recovered; Danish statistics claim 90% of recoveries in 412 cases; a German writer claims 82% cures; and Dr. Jno. J. Repp, of Iowa, has collected statistics of 166 cases in Iowa, with results of recoveries in about 76% in uncomplicated parturient paralysis, by use of Schmidt's treatment. Where a funnel, milk tube, and rubber tubing cannot be had one may readily use a very small, soft rubber catheter to enter the teat and a small, hard rubber syringe to inject the fluid therein.

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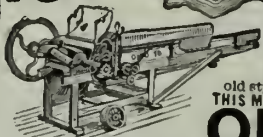
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ON THE ROAD.

The Transformation in Two Valleys.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

The present era of settlement in California is simply a process of transforming comparatively few large holdings into many small ones on the basis of a reasonable price for lands. The old boom-time price of \$100 to \$125 per acre for ordinary bare land is played out. The best of such land, including grain-used and even sometimes partially improved lands, can be had in most places all over California from \$25 to \$50, and much of it under ditch at that range. The places where good land can not now be had at, at least, the higher figure, are to one side of the march of events here and are, as it were, curiosities. Deaths; development of ditch and other systems of irrigation, both private and public; cheap fuel in the shape of oil and cheap electric power, generated by our streams in the mountains, with publicity, have broken up the old order of things and are causing a new one to rapidly take its place. The details of this transformation are of interest to all, especially to those who are interested to make homes.

FOWLER.—The large holdings of land about Fowler have been breaking up for several years, and there has been considerable influx of settlers on small tracts in consequence. The movement is steadily going on. The effect of this is seen in the industrial and architectural growth of the town. Among the notable evidences of this are the following:

The First Presbyterians have just finished a handsome new church, which, with the furnishings, cost some \$8000, and the whole amount was raised and paid by public contributions in six months from the time solicitation was begun.

M. Brady's new 50x80 feet, one-story store, with plenty of glass front and a simple, but up-to-date, style of architecture, just finished, costing \$5000, was opened for trade September 1.

There was more unimproved land in the neighborhood sold last year than for fifteen years before.

Its shipments of raisins are second in amount only to those from Fresno.

It has a good cornet band, with \$310 worth of instruments.

It has a handsome public hall, two handsome school buildings and three churches, beside the one already spoken of.

It was the first place to organize a branch of the California Constructive League, for getting a State law to provide for the building of storage reservoirs for water for irrigation.

Two rural delivery routes were recently established, which now have a total of 145 boxes on them, and soon will have 200.

And last, but by no means least, since they say that it supplies a good deal of the inspection for all the other good things, Fowler has a Ladies' Improvement Association, which has recently laid out and planted a little park near the depot and provided a well, engine and pump for irrigating it, the railroad company furnishing pipe for piping the park and boiler and lathing for fencing it. The well and pumping plant also furnish water to keep the streets of Fowler sprinkled.

A Board of Trade, with a charter membership of forty-nine, was organized the first of last July and is preparing to do much valuable service for the town and community.

DINUBA.—Dinuba is being built up with substantial brick public and business buildings at a surprising rate. The secret of this possibly lies in the fact that the town has the best of soil around it, and a public irrigation district—the Alta—which is so prominent a feature in the life of the district that an excellent newspaper there, the Advocate, is named after the irrigation dis-

trict rather than the town. As a result of these facts and others, the former large individual holdings of land are rapidly breaking up. One firm has sold locations in that vicinity to 200 families in the past two years, some 125 of which have already settled on their places, and more are coming as soon as the crops are off this year. Another firm has done equally well. The excellence of the land at Dinuba and in the vicinity is perhaps best attested by the fact that in it has been located for several years one of the largest nurseries, run by one of the most conscientious nurserymen in the State, F. H. Wilson of the Fresno Nursery Co., who removed from Fresno to Dinuba some years ago. Much of the character of nursery stock, in its freedom from black knot and other diseases, depends upon the soil on which it is grown, and, with this in view, the soil of Dinuba has proved excellent. If so for nursery stock, it seems to many likely to be so for the grown trees.

Much of the stock, therefore, has been taken around its home for orchards. Mr. Wilson recently budded 600,000 seedlings for 1903, and has a large amount of stock ready for this fall. Every precaution is taken to keep the stock true to name. Only home-grown stock is sold—none is bought—and Mr. Wilson himself does all the bud cutting. As the nursery is on the line of the S. P. Railroad, and only 3 miles from the Santa Fe Railroad, stock is given the least possible exposure in transit. This feature of soil alone is sufficient to give Dinuba extensive publicity and prosperity.

In general in the Dinuba section it is about 5 feet to surface water. Wells for irrigation are sunk to about 80 feet and for drinking purposes to something like 100 feet.

Within 6 miles of Dinuba to the eastward is a thriving vineyard section containing the little hamlets of Sultana and Orosi, in both of which the publication of papers has been recently begun, and which are noteworthy as green fruit shipping and raisin points; beyond which section lies a large tract of fine grain land, well cultivated in that way.

REEDLEY.—Reedley, 5 miles north of Dinuba, on the Southern Pacific Railroad, has not so good soil on the whole, though there are plenty of people making prosperity for themselves out of the soil there; it was recently visited by an extensive fire, which, however, may prove to be not so bad a thing in the long run; it is one of the sections in which the wells do not seem to be affected by irrigation, and there is prospect of several large tracts, naturally tributary to it in a trade way, being put on the market in small colony lots this fall, which would be a great help to the town. Reedley is fortunate in having a vigorous, excellent and outspoken paper—the Exponent. There is prospect of much orange raising nearby and tributary to it in a commercial way, and altogether it seems likely to keep up with its neighboring towns in the race for growth and prosperity eventually.

NEWCASTLE'S CANNERY.—Newcastle, up in Placer county, is a town of business men. The whole population, from the ground up, has had a business training, and when the "cannery man" came along and wanted a bonus to start a cannery, they gave themselves a little different experience than the people in some other towns—Hanford, for instance. The Newcastle people listened to the promoter; they took a little counsel among themselves and found they could raise the amount. Then they said: "Yes, sir; we can raise the amount you ask and we will pass it over to you on one condition—that whenever you cease to operate the cannery the title to it shall revert to us." The promoter said he would take the matter under advisement, and then he went away and never came back. But the Newcastle people went on prospering.

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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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FRUIT MARKETING

French Walnut Crop.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

GRENOBLE, FRANCE.—The following cable has just been received from U. S. Consul T. W. Murton, at Grenoble, France, which will be of interest to walnut growers and dealers in California:

Commus, San Francisco:
Walnut crop almost annihilated; hail-storm. (Signed) T. W. MURTON,
10:40 A. M. U. S. Consul.

The importance of this news will be appreciated when it is stated that walnuts valued at \$280,432 were imported into the United States from Grenoble, France, last year.

San Francisco, Sept. 16, 1902.

Selling Prunes in France.

At a meeting of prune growers in San Jose last week, according to the Herald, Mr. Paul Masson, who has just returned from a stay of several months in France, gave a most interesting account of the growing and selling of prunes there. He said that very few people indeed depend upon prunes solely, as they are grown as a part of the farm crop. Usually the trees are scattered through the vineyard or are in the pasture lot, and in such places the trees are cultivated only once in a number of years.

"The cry of French competition," said Mr. Masson, "should cease. On the wharves I saw mountains of boxes of our fruit which had been shipped to France, and the steamers were loaded with it. I sold my own prunes in France for more than 3 cents net, f. o. b. San Jose. There is a splendid market for us in France and at good prices. During the last ten years the growers of France have averaged over 6 cents per pound net for the prunes. There is a fine market there not only for prunes, but all kinds of fruit, particularly apricots. We should develop it.

"The steamer company owning the steamer on which I traveled is now paying 12 cents a pound for inferior prunes in New York, buying in ten-ton lots.

"In France I was told that our prunes are preferred for cooking to the French product. The French prune is cooked, steamed or baked and then sealed in air-tight packages. For table use uncooked it is preferred to our fruit; but the California prune, dried as it is, is greatly preferred where it is to be cooked."

Mr. Masson said that he had spent several weeks in the prune-growing districts and he was personally aware of the fact that there was no crop in France this year.

Mr. Masson assured the growers that there is a fine market in France for our fruit and urged them to develop it. At the close of his remarks he was given a vote of thanks.

What the Prune Association Should Do.

Mr. John Robertson of Edenville, in a letter to the San Jose Mercury, makes the following pertinent suggestions: I have been disappointed with the answers given to the questions by the president of the California Cured Fruit Association. In fact it seems to me he has evaded them and it does seem to me the time has arrived for prompt and decided action by the growers. He tells us he will distribute when the board so orders. If that is not evading the question, it looks like it. He tells us he has about \$94,000 of our money on hand and that he intends to keep it and the warehouse for fear he would run short in the lawsuit with the packers, which will extend over many years, so that we must just keep quiet. This is too much, and I, for one, protest against it.

I was opposed to placing the Association in the hands of a receiver at the time when we had our 50,000,000

pounds of prunes on hand as it was very evident it would demoralize the market (which it did at the time), but the time has now arrived and my proposition is to have a petition with 100 members asking the court to appoint three men, as the law provides, to take the whole management out of their hands. Let the receivers distribute the money on hand. Then let them submit the issue between the Association and the packers to arbitration. We don't want a dollar from the packers that we are not honestly entitled to. If the packers will not submit their case to a board of arbitrators then let the receivers hold the warehouse as security for funds to litigate with.

The whole matter can be settled within ninety days by selecting three square, honest men as receivers. Otherwise we will have years of litigation and see every dollar, warehouse included, squandered, and we will be fortunate if we don't have another assessment.

THE VINEYARD.

Grapes at Fresno.

The Fresno Democrat of Sept. 11th says: In all probability there will be a shipment of Sultanas made this week. One packer was found who claims to have received about four tons of raisins, and he states that he might have made a shipment of Sultanas before this had there been much demand for them. It is reported that one of the other packing firms will ship this week or the first of next. It is said that it will be possible to ship Muscats by Monday and the demand is for that variety.

The Association directors have not fixed the prices yet, and it is understood among the packers that they will not do so until almost the end of the month. Probably the packers will be allowed to make early shipments without paying for the goods, with the understanding that they will pay according to the prices named later. Lyman, a packer of Fowler, who handles a few cars every year, is reported to be buying on the outside and paying 34 cents. The packers here think he is safe at that figure, for they believe that the price will be nearly 4 cents. The object of the directors in delaying is said to be that in this way they can prevent outsiders from invading the field.

Picking is in full swing throughout the belt. In all directions the vineyards are crowded with Japanese and Indians and the piles of loaded trays are becoming more and more numerous. The weather is almost ideal for drying and the raisins will soon mature once they are on the trays. If this warm spell continues, the deliveries will be on with a rush by the 15th of the month.

Though from other sections of the State reports come of a great shortage of help, there seems to be no complaint of that character here. It is said that in Santa Clara and southern California the fruit is spoiling on the trees for want of help. In this section, so far as known, all the dried fruit men and raisin growers are able to secure sufficient labor to handle their crops. The dried fruit season is at its height. Long lines of heavily loaded wagons may be seen before the various packing houses on the Row.

Price for Wine Grapes.

SANTA ROSA, Sept. 13.—An important meeting of the grape and wine men was held to-day at Healdsburg. The Wine Association has announced it would pay \$22.50 per ton for grapes this season, and in addition meet any advance made by any concern handling 500 tons or over.

Raisin Association Prices.

The directors of the Raisin Growers' Association are sending out this notice: "The directors of the Association will name prices on Sultanas and Thompson Seedless, for unbleached goods only; any advance on this price for bleached

goods will be subject to adjustment between the packer and the grower, without reference to the Association. In regard to Valencia, a price will be made for Standard ungraded and Pacific ungraded, and the advance for bleaching settled by mutual agreement between packer and grower, as in Sultanas and Thompsons."

The Crop and Its Handling.

A dispatch from Fresno says: The raisin grape crop is so large and so greatly exceeds all estimates made that the growers are scrambling for shake trays on which to sun-cure them and for sweat boxes in which to deposit them after drying and transporting to the packing houses. It is not unlikely that the growers will have to sell to the wineries rather than take the risk and worry of drying, with prospects of showers. The shortage in trays is general and the planing mills and lumber yards report a demand far exceeding the supply of material. The winery price for grapes is \$12 a ton.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING SEPT. 2, 1902.

708,294.—CUSPIDOR RACK—F. F. Ball, Sonora, Cal.
708,453.—OIL BURNER—W. N. Best, Los Angeles, Cal.
708,114.—ROLLER BRAKE—L. H. Bill, S. F.
708,116.—FURNACE—M. P. Boss, S. F.
708,117.—HOSE COUPLING—W. F. Bowers, S. F.
708,199.—HAY DERRICK—E. Brust, Davisville, Cal.
708,312.—PLOW—H. Bryan, Modesto, Cal.
708,313.—SWINGING BAR—F. R. Buck, S. F.
708,461.—TIDE MOTOR—E. B. Cade, Skaguay, Alaska Ter.
708,332.—STEERING GEAR—P. L. Ennor, S. F.
708,135.—WATER TOWER—H. H. Gorter, S. F.
708,341.—WARDROBE—P. D. Graff, Fresno, Cal.
708,139.—MUSIC CHART—C. M. Halvorsen, Los Angeles, Cal.
708,353.—WALL PLASTER—C. R. Harris, Los Angeles, Cal.
708,314.—WALL PLASTER—C. R. Harris, Los Angeles, Cal.
708,227.—STEAM TURBINE—R. B. Hewson, S. F.
708,232.—SPROCKET WHEEL—D. C. Jackling, Republic, Wash.
708,233.—HOOP LUG—P. C. Jurs Jr., S. F.
708,151.—CULTIVATOR—A. K. Kopperud, Byron, Cal.
708,375.—WINDMILL—T. W. Lowe, Stockton, Cal.
708,064.—CULTIVATOR—J. A. McKinnon, El Cajon, Cal.
708,049.—BICYCLE BRAKE—G. Stabile, S. F.
708,103.—PIPE COUPLING—H. H. Warner, Tacoma, Wash.
708,104.—PIPE JOINT—H. H. Warner, Tacoma, Wash.

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330 Market St., San Francisco, Cal.

AND

918 F St., Washington, D. C.

Patrons of Husbandry.

Tulare Grange.

To THE EDITOR:—Tulare Grange held its regular semi-monthly session on Saturday, the 6th.

The special committee previously appointed to report on the advisability of establishing a co-operative store at this place reported favorably, recommending the present as a proper time, Tulare a suitable place, and the present effort to establish a "Rochdale" store worthy of support.

Communications from the Worthy Master of the State Grange and from Senator Perkins were read and filed.

The National Grange topic, "Why does cultivation of the soil promote plant growth and to what extent can cultivation contribute to such growth?" and also the alternate subject, "What are the relative advantages of selling the product of the dairy in the form of milk, cream and butter?" These subjects, being directly in the line of work of grange members, were fully and interestingly discussed.

The question box was now opened by the secretary and the following questions drawn from it and read:

1. Should this grange recommend or encourage the payment of the bonds of this irrigation district on the terms mentioned in the Evening Register of the 4th.

As explained in the grange the terms are about as follows: The district bonds amount to \$500,000; interest unpaid to July 1, 1903, enough to make the whole indebtedness \$663,600. In liquidation of this amount the bondholders have agreed to take, if made in one payment, \$273,075, practically 40 cents on the \$1 of the assessed value of the district; to this amount bondholders who are taxpayers in the district will add about \$10,000. In approval of this compromise settlement the grange prepared the following resolution:

Resolved, This grange of Patrons of Husbandry, after mature consideration, approved the proposed compromise with the bondholders of Tulare Irrigation District, and earnestly urge the taxpayers to, without unnecessary delay, avail themselves of the same.

2. What questions or resolutions on subjects of public interest and necessity should this grange present to the State Grange for its approval and support?

A committee to report on this last question was appointed, report to be made next meeting.

The subject for next grange meeting will be, "That the adulteration of food and drink is a greater evil than floods and cyclones."

A class of three were initiated in the first and second degrees. J. T.

THE STOCK YARD.

Against a Beef Trust.

The Government is still on the lookout for a beef trust. It is telegraphed from Washington that officers of the Department of Justice are diligently searching for information concerning the character of the new beef combination which the "Big Six" are reported to have decided to bring into being on September 27. That this move is designed to evade the restrictions of the injunction granted by Judge Grosscup on May 20, as well as the provisions of the Sherman anti-trust law, is generally admitted, but the question whether the act of combining is in itself a violation of the injunction is still in the air.

The Grosscup injunction names all of the important officers of the "Big Six" companies, as well as the corporations themselves. Therefore any of these officers who associate themselves with the new merger will, if the new combination is in violation of the injunction, be subject to proceedings for contempt.

If the new combination succeeds in evading the terms of the injunction granted by Judge Grosscup, and evidence is found that the combination in any manner violates the Sherman anti-trust law, the Government will promptly ask for another injunction

covering the points not included by the injunction already granted.

THE BEEF OUTLOOK.

Secretary Wilson of the Department of Agriculture returned to Washington recently from a Western trip, with the opinion that the heavy grass crop will insure a large supply of cattle and a drop in the price of beef. He said:

"The grass crop is excellent. The census tells us that there has been a great increase in the last ten years in the number of cattle in the United States. This information, taken together with the fine crop of grass, insures lower prices of meat. I do not believe that the price of meat, however, will ever be as low as it has been in the past, for the simple reason that the American people are more prosperous than ever before and are eating more meat than ever before. However, exceedingly high prices of meat will be a thing of the past as soon as the present feeders get fattened up to a beef condition. Another thing that will tend to keep the price of meat a little above the former low price is the demand of England for our meats."

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except last on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke 30 Montgomery St., S. F.

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SWINE.

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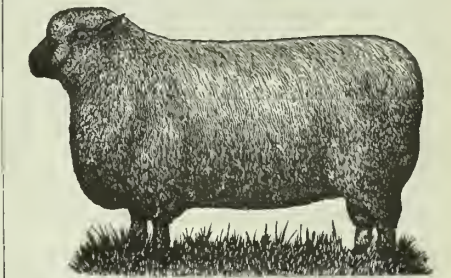
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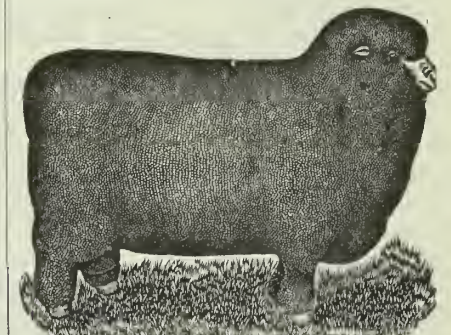
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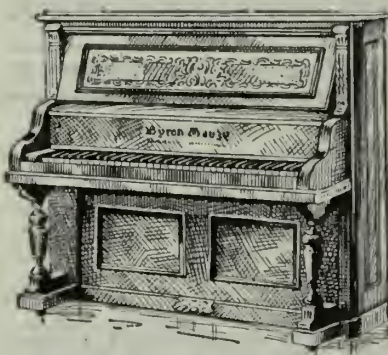
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 13.

SAN FRANCISCO, SATURDAY, SEPTEMBER 27, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

The Myrobolan Plum.

We think a picture of a fine specimen of a California-grown myrobolan plum tree will be of interest to our fruit-growing readers because this wild species of prunus from Europe has practically supplanted all other plum stocks in California propagation, and is the foundation upon which a considerable fraction of our plum and prune trees, and not a small area of apricots also, are now successfully growing. This wild species, to which the cherry plum belongs, has been in California from early days; but when the great extension of fruit planting began about twenty-five years ago, it was quite a question as to which was the best plum stock, and numbers both of European and American origin were widely tried. The myrobolan survives as the fittest in hardiness, in evenness of growth, in non-suckering, and others are now but little heard of.

All growers may not have heard that the distinctive name of the species was borrowed by the botanists from another horticultural association and applied to a plum. Webster reminds us that myrobalanos is a compound Greek word, the first two syllables signifying "sweet juice" and the last three meaning an acorn or any similar fruit. The Latin myrobalanum was a palm fruit, from which a balsam was made, while the French used the term myrobolan for the name of a dried astringent fruit much resembling a prune. With this tangle of names, and with the natural variations of a wild species, there was early in California fruit growing quite a sharp dispute as to which was the true myrobolan and which was not. This issue has largely lapsed, and it seems reasonable now that not only were there natural variations involved, but added differences were caused by the fact that some growers and propagators used rooted cuttings and some used seedlings on which to bud improved varieties. The superiority of the root system of a seedling is now generally recognized, and we hear less of the claims of true and false myrobolans.

The Californian who first made the use of the myrobolan a special claim in his business was the vet-

eran James O'Neil of Haywards, who took the name of the species for the title of his nursery. He secured his seed from an old and stalwart tree in one of the pioneer orchards of Alameda county, of which we gave a picture in these columns some years ago. There are old trees in other parts of the State. Mr. John Rock of the California Nursery Co. writes us that last year he visited an old orchard on the banks of the Feather river, near the Gridley and Oroville

in California. Very often complaints are published that the plum, prune and apricot do not grow as well on the myrobolan as they do on the peach root and make a bad root system; also that there is a true and a false myrobolan. All these complaints arise from the fact that trees were worked on myrobolan cuttings. Such trees make a very poor, horizontal root system and have no descending roots like those grown from seed. Some of the imported seedlings may vary in habit and growth. Nearly all the seed for seedlings grown in France are gathered in Italy and other Mediterranean countries from woods and hedges where they are growing wild. We have on our grounds an orchard of myrobolan plums, from which we gather the seeds we plant and raise all the seedlings we use."

The picture shows one of the trees to which Mr. Rock alludes. Certainly such a tree grown under the favoring conditions which California affords will produce a stronger growing race of seedlings than can be had from European woods or hedge rows, and during the last few years the importation of foreign seeds and seedlings has been practically abandoned.

According to current reports, plenty of new people are coming. The low colonist rates went into effect on the first of this month and will continue in effect for sixty days. The railways claim that they have abundant evidence that people from the agricultural sections of various Eastern States are preparing to take advantage of these rates to come to California and settle on farms,

and, unless they are disappointed in all their calculations, the months of September and October will see a much larger influx of settlers than took advantage of the settlers' rates last fall.

It is possible that shortage of rice on the other side may teach the Orientals to use more Pacific coast wheat and flour. It is reported from Tokio that the Bank of Japan calculates on a shortage of from 10% to 15%, while other estimates place it from 20% upward. The normal yield of rice is valued at about 600,000,000 yen; and if the shortage reaches 50%, the supply would not suffice for Japan's people.



Myrobolan Plum Tree on the Grounds of the California Nursery Co. at Niles.

bridge on the P. Hefner ranch, where there are several myrobolan trees, one of which measured 92 inches in circumference 2 feet above ground, was over 40 feet high and twenty-eight years old.

In his nursery work Mr. Rock saw very early the advantages of the myrobolan and has grown his seedlings from the fruit of selected trees grown especially for this purpose. The fine picture on this page shows one of these trees. In the last catalogue of the California Nursery Co., Mr. Rock gives his conclusions from a long myrobolan experience in these words: "The myrobolan plum has proved to be the best of stocks on which to grow the plum and prune

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, September 27, 1902.

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The Week.

The weather has taken on threatening aspects and the Weather Bureau recognizes the possibility of showers, still it is only occasionally that September develops much water and it bids fair to pull itself through on a dry basis this year. The universal choice would doubtless be that the rains should come late and make up for the delay by volume then. The fruit is late this year and much value inheres particularly in the large grape crop which is ripening. Labor is scant and the fruit will not be hastily gathered. Much depends upon a good long clear time for the work, both with grapes and the late run of dried fruits, and in gathering in from the fields the various grain crops which are still out of cover.

Wheat has been very active, having advanced 2 cents since our last report, but has now receded 1½ cent—leaving a gain on the right side, however. Spot wheat is doing even better than futures just now. Outward movement has been small in wheat, only a schooner for Australia and a small half cargo for Europe, but barley has surpassed all records. Two steamers have taken 12,542 tons of barley, worth \$282,210. This is the largest shipment of this grain ever made in one day, and one of the cargoes, worth \$147,500, is the most valuable barley cargo ever shipped from this port. These facts are very significant to barley growers. Feed barley is now in stronger request than shipping grades, though Chevalier is wanted for Australia. Oats are moderately firm, in sympathy with barley, and the fact that the Government is talking about buying oats again. Corn is much mixed—light stocks strongly held. Rye is held at \$1 per ton higher. Large white beans are in active demand, both for local use and shipment, and prices have advanced from 5 to 10 cents. Millstuffs are high and rolled grain follows whole grain in its upward course. Hay is fairly steady at the last advance, though receipts have been rather free. Beef and mutton are firm and improving. Hogs are very firm for choice medium weights for packing, and the outlook is good. Fancy fresh butter is stiff; other grades unchanged. Cheese is steady with fair demand and moderate stocks. Fancy fresh eggs are hardly quotable and have sold up to 40@41 cents, while others come down to a storage basis and are abundant. Poultry is in light receipt and easy demand. Potato freights are to be advanced again at the close of the week, but prices are not affected so far. Onions are quiet and 5 cents lower. Fancy Gravenstein apples are scarce and in request. Wine grapes are being sought for, and a few late Bartlett pears would sell well. Table grapes are plentiful. Melons are in good supply and selling well. Lemons are abundant and prices no better. Dried fruits are very firm, especially high-

grade apricots, peaches and big prunes. New prunes are already going East. Almonds are steady at a fair demand. Walnuts are firm, and it is said that the Association's stock is covered by orders at prices fixed last week. Hops are being delivered on contracts, but no spot sales are reported. Wool buying in the country is still going on at good rates. There is little doing in the city and little to do it with.

Speaking of country wool sales the details of the Tehama sales which come by telegraph just as we go to press are interesting. On Tuesday fully 2000 bales of wool changed hands and Wednesday wound up the market, when the entire spring clip of about 3000 pounds went into the hands of buyers. Prices ranged from 11½ cents to 11¾ cents, which were very satisfactory to growers. The lowest fall clip ever sold at Red Bluff was 7 cents and the highest 18 cents.

How a horticulturist may rise in municipal affairs is shown by the fact that George W. Harney is now Mayor of Marysville by choice of the City Council. Mr. Harney is manager of the Abbott orchard in Sutter county, of which he has made a great success, and is, too, County Horticultural Commissioner.

An interesting story comes from the prune drying fields. At the East Side Fruit Growers' Union a bunch of young fellows from town had been employed and paid the union wages of \$1.50 per day. They struck for \$1.75 and were granted it because of the scarcity of help. Last Saturday evening there was a tremendous rush of prunes, and, taking advantage of the emergency, they struck for \$2. Then it was that the daughters of the stockholders of the union, whose fruit would have gone to waste, came to the front, worked all day Sunday, and are still engaged at it at the rate of \$1.75 per day. The strikers did not include all the men employed. The regular force are at work beside the young women, satisfied with the compensation paid in the past, and with the added delight of pleasant companionship, no doubt.

The latest from the prune situation at San Jose is that the directors are meeting to take action on the protest of the growers in the Healdsburg district. This protest is the only obstacle to the distribution of the dividend upon the crop of 1900, which amounts to nearly \$75 000. It is said that the protest is based upon a large quantity of prunes, of which the Association officers have no record, but which the Healdsburg growers maintain was delivered. Payment upon 9000 pounds of prunes has already been made, but the growers contend that the dividend should have been based upon a total of 28,000 pounds delivered. If this statement is correct it looks as though 19,000 pounds of prunes had dropped out of one book and their value out of another. It is hard to see how this could be. It is announced that the result of the vote on amendments and directors will be declared this week.

The northern extensions of the citrus fruit district are to be brought into special prominence by a citrus fair which will be held in this city this fall by the State Board of Trade. According to the terms of the resolution all counties north of Tehachapi will be invited to participate, and the idea is to make citrus fruits, olives and olive products and wines strong and distinctive features of the proposed fair, for the purpose of emphasizing the great wealth of these characteristic California products in northern and central California, those portions of the State directly tributary to San Francisco. A committee has been named to take up the work, and to consider the matter of the date for said fair and determine other details. The California State Board of Trade is a growing institution, and in keeping with its growth it has made a number of innovations recently in the line of increasing the efficiency of its work and rendering its exhibit more popular. Some five or six additional counties have within the last few months put in new exhibits, while some of the other counties have very materially improved their displays.

There seems a fair field for inventive ingenuity, and possibly the opening of a marketing of the peltry of thousands of our field varmints in the peculiar trade in rabbit skins in which England is the grower, the Continent the manipulator and the United States the consumer. Our Consul at Birmingham, in a brief note to the State Department, states that for a

great many years rabbit skins, intended ultimately for American use, have undergone a process known as pulling, for which they were sent to the Continent and thence shipped to the United States. A few bales of these skins were shipped last winter, experimentally, direct from Birmingham to the United States. It was thought that we had produced a new machine in the United States which could pull out the long hair of rabbit skins at less cost than by the extremely cheap hand labor of the continent. It now transpires that the machine experiment was not a success and the English dealers are again sending their skins to the Continent, where the long, useless hairs are laboriously pulled out by hand and the skins reshipped to hat manufacturers in the United States, who shave off the close hair and use this fur to make felt hats. Millions of rabbits, British and Australian, are consumed annually in Great Britain. Dealers purchase skins from game and poultry shops. One Birmingham dealer handled 3,000,000 rabbit skins last year. We ought at least to be able to do the hair pulling by machinery if we cannot furnish the skins.

The Berkeley school department has done a good thing in providing for a local arbor day. This year it is to be November 10 and will be celebrated by citizens and school children alike. The plans for the observance of arbor day, as already roughly outlined, include exercises at the various schools in the morning, tree planting to be included in the programme.

QUERIES AND REPLIES.

California Land Values.

TO THE EDITOR:—What are your woodlands worth per acre in California? What is the value of land ready for fruit growing? Can good woodlands be had for \$5 per acre, or ready cleared land for that price? Is the northern part of the State better for fruit growing than the eastern, western or southern parts? How many years will it take an olive and an orange tree to come to bearing? What are alkali lands good for? Are cowpeas good for green manuring in California?—P. N. L., Bermuda, La.

Timber lands are worth all the way from \$5 per acre upwards, according to situation and quality of timber. The lands which have the best timber, as a rule, lie at a greater elevation than the lands which are now used in commercial fruit growing, although in the redwood district (owing to the fact that these trees grow at a lower elevation) the cleared land is often valuable for fruit purposes. The lands mostly employed for commercial fruit growing are either valley lands, naturally clear, or previously cleared from valley oaks, etc., for grain growing. Foothill lands which are cleared for fruit do not, as a rule, have timber which is of much account except for fuel purposes. Lands ready for fruit cultivation range in valuation all the way from \$25 or \$30 an acre up to \$100, and in some cases lands adjacent to profitable orchards, and eligibly situated in reference to towns and established fruit shipping facilities, may be held as high as \$200 per acre. There has been recently quite a reduction in the price of California lands. The boom spirit has largely gone out of them, and good land either in districts of ample rainfall or capable of irrigation by systems already established can be had at very reasonable prices in different parts of the State.

It is not possible to say whether any main geographical division of the State is better than any other for fruit growing. Each region has its own particular adaptation and conditions, and the same fruits are grown on suitable soils and situations through north and south distances of 500 or 600 miles through the interior valleys and foothills. The lands directly exposed to ocean influence and the lands above the elevation of 2500 feet are only adapted to the hardier fruits and no large commercial enterprises exist in those districts, except in southern California, where, by an eastward trend of the coast, good fruit lands are found all the way from the coast flats up the valleys and in the case of the main valley of southern California to a distance of 60 miles or more toward the interior. California can not be closely divided geographically according to horticultural adaptations. In each division there are differences in soil, exposure and topography which must be taken into question in making selections.

Budded orange trees, which are about the only

ones planted at the present time, begin to bear the second year after planting in orchard and increase after that rapidly each year in the amount of product. The bearing of the olive depends upon the local conditions. A four-year-old or five-year-old olive tree in a good location should bear a considerable amount of fruit.

Alkali lands range very widely in value, according to the amount of alkali which they contain, and their chief value at present lies in their ability to produce crops for pasturage.

Green manuring with leguminous plants is a treatment which California soils are greatly in need of, owing to their deficiency in humus; but because our moisture for growth is available during the winter, and not in the summer, we must have hardy legumes for our practice of green manuring. Cowpeas are not suitable, but Canadian field peas, lupins and some of the clovers which make good growth during our winter season are now being satisfactorily used to a considerable extent.

Your questions are so complex and involve so much that answers can only be found in a carefully prepared treatise on the subject, which our "California Fruits and How to Grow Them" is said to be.

The Agricultural College.

TO THE EDITOR:—Will you kindly give me information concerning the agricultural colleges in the State. Are there any beside the department at Berkeley? What are the qualifications for entering; does a person have to be a high school graduate? Also what would be cost of attending, e. g., books, board and tuition, if any?—READER, Sanger.

There is only one agricultural college in California, and that is one of the colleges of the State University at Berkeley. There is now being developed at San Luis Obispo an agricultural school of lower grade, which will give particular attention to the practical side of instruction. This school was established by the last Legislature, a fine farm has been purchased as a site for it and construction of buildings is now being arranged for by the trustees. It is expected that the school will be open next year—as early in the year as the buildings can be secured. For regular entrance to the college of agriculture a satisfactory high school course is required, and four years in the University leads to a degree. There is a provision that a student over twenty-one years of age may attend as a special in agriculture for a long or short period, and may select such agricultural studies as he desires or is prepared for. Special students are admitted without stated examination and high school preparation is not insisted upon. A special student cannot take a degree. There are now being offered "short courses," of which two will begin on October 7 and continue for ten weeks. One will be the "dairy school" the other the "short course in agriculture and horticulture." For these courses special preparation is not insisted upon, but the grammar school course, or its equivalent, is usually expected, and students of seventeen years and upward are received. These short courses are for young and old of both sexes who desire to learn what they can during ten weeks attendance. One can meet cost of living in a comfortable way at about \$25 per month; he can spend twice as much, or, by hiring a room and boarding himself, he can get through on little more than half as much. The University makes no charge for tuition and expects the student to provide for his own subsistence, as it has no boarding or lodging adjuncts.

Smyrna Figs from Tehama County.

TO THE EDITOR:—I send you a sample of Smyrna figs which grew on the Stanford ranch at Vina. Mr. Chas. G. Lathrop, who has charge of this property, has turned the fig trees over to me to fruit, and to propagate young trees from. The above mentioned trees were imported by the San Francisco Bulletin, and started from Smyrna on the 14th of January, 1882, and reached San Francisco early in April, 1882. Governor Stanford subscribed a certain amount towards paying for these cuttings and received a certain portion of them, which he planted at Vina. There are 100 of these trees that are the Lob Ingr. This variety is described by Gustave Eisen as being the best type of Smyrna.—W. HERBERT SAMPSON, Corning.

The figs arrived in good condition and are a fine sample. It is interesting to note that many of the

old trees of the earliest introduction are likely to be made profitable by the fortunate acquisition of blattophaga.

Cowpeas in California.

TO THE EDITOR:—Will you tell us about the cowpeas: Where to get the seed, what time to sow, how much seed to the acre, how deep to plow, how deep to cover, could the seed be plowed in, when to harvest for hay, are they good pasture for horses and cows, how do they stand dry weather, and would it pay to sow on sandy soil?—SUBSCRIBER, Santa Maria, Cal.

We supposed we had already settled the main facts about the cowpea in California. There is a large list of varieties of the tender legume known as the cowpea, and they are all beans and not peas. Like other beans they will not stand frost, and cannot be grown in the winter unless one has a strictly frostless place. They do not like protracted drouth, though they will stand a good deal of it, and they are not profitable on dry soil, for they do not make growth enough. Sow after the frost is over, and plow in with a shallow furrow; if the soil is light they will come through all right. In preparing for spring sowing it is well to plow deep in the fall to get deep culture and hold moisture. For hay, cut before the seed hardens. The green plant is good cow pasture and for horses, so far as they take to them. There are very few places where cowpeas are worth growing in this State.

Reddening Vine Leaves.

TO THE EDITOR:—Enclosed you will find a leaf from a diseased grape vine. A number of them began to show the disease shortly after the grapes set. Some of the vines affected have not borne. Some not so badly affected have a few bunches of grapes. I would like to know what is the disease and remedy?—READER, Antioch.

The leaves show a reddening of the tissue between the veins of the leaf. It is not in itself a disease nor can the cause of the trouble be found by examination of the leaves alone. Something is the matter at the roots. Possibly those vines are on gravelly spots and are suffering from drying out of the soil; possibly they are over rock or hardpan and such places also become too dry. Possibly the few affected vines have phylloxera on the roots. Examine the soil for yourself as to moisture, condition, subsoil, etc., and if you cannot satisfy yourself of the cause send some of the small fibrous roots for microscopic examination.

For a Weary Hen.

TO THE EDITOR:—I have a Plymouth Rock hen which seems to be in the dumps; she sits around all day and has no energy, preferring to drink instead of eating. At times she makes a wheezing sound, as though she had a cold. Please give me any information you can as to the cause and cure.—READER, Penryn.

Unless we could get clearer symptoms of some other trouble, we should conclude that the hen was being devoured by lice, and we should dust her thoroughly with insect powder. If she is not lousy, you ought to find some other signs of trouble than those you mention.

Grain Weevil.

TO THE EDITOR:—Please inform me through the PACIFIC RURAL PRESS what is the cause of grain weevil, how it originates, and how to get rid of it.—SUBSCRIBER, Gilroy.

The cause of the grain weevil is the presence of its parents, and the multitude of its cousins is due to the lack of thoroughly cleaning out, airing, fumigating and whitewashing the place where you keep the grain. The best way to get rid of weevils is to fight them by these methods, open the building during the summer to heat and air, whitewash thoroughly with good, hot whitewash, filling the cracks as full as you can with a good force pump whitewash sprayer.

Manufactured Eggs.

TO THE EDITOR:—One friend says that eggs are manufactured; another says the so-called manufactured eggs are eggs that have been preserved in some solution, awaiting a market. Which is right?—READER, Mare Island.

There are no such things as strictly manufactured eggs—that is, all the various forms of eggs preserved by cold storage or in solution, or by drying, etc., which may be on the market, are nothing but eggs, and are not made out of other substances. There are

sometimes reports current about the artificial manufacture of an egg from shell to yoke, and California has been credited with this wonderful operation; but there is no truth in any such reports.

Silver Prunes.

TO THE EDITOR:—Do you dip Silver prunes in lye like French prunes, and do they process Silver prunes like French prunes? I see California Silver prunes in the market look so yellow.—EDW. SILVA, Colorado.

The light yellow of the Silver prunes is due to sulphuring. You will have to experiment yourself to determine what exposure to sulphur fumes will produce the result. This sulphuring is done as soon as the fresh fruit is spread on the trays and before they are placed in the sun for drying.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 22, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Most southerly winds prevailed during the first of the week, with temperature below normal, smoky atmosphere and heavy dews, but more favorable conditions commenced with Friday, and fruit drying is now progressing rapidly. High winds in some sections Friday night caused slight damage to late fruits. Almond harvesting and prune curing continue and both are yielding heavy crops. Peach drying is completed. Grape picking is progressing and the yield is generally very satisfactory, though wine grapes in some sections are not up to expectations. Heavy shipments of fruit are being made from Sacramento. Citrus fruits are in good condition. Hop drying is in progress.

COAST AND BAY SECTIONS.

The foggy and cloudy weather at the beginning of the week was unfavorable for fruit drying, but conditions were more favorable at the close. The peach crop in many places is too heavy for handling and much of it will be wasted. The correspondent at Peachland is authority for the statement that 1000 tons of peaches are going to waste in that vicinity. Grapes and late fruits are ripening satisfactorily and grape picking is progressing. Hop picking is nearly completed; the yield is the best for several years. Bean harvest has commenced and thrashing will begin next week; the crop is heavy. Corn and potatoes are in good condition. Grain thrashing and hay baling are progressing.

SAN JOAQUIN VALLEY.

The dense smoke and cool weather during the greater part of the week were unfavorable for fruit drying and raisin making, but conditions improved somewhat toward the close. The first crop of raisin grapes is nearly all on trays. There is a heavy crop of grapes in most sections, but warmer weather is needed to increase the percentage of sugar. Prune picking and drying are progressing. Late peaches are ripening and will yield a good crop. Wine making has commenced. Citrus fruits are in good condition. Farmers are preparing for early fall work and plowing and seeding have commenced in some places. Dry feed is plentiful and stock are in good condition.

SOUTHERN CALIFORNIA.

The weather has been generally clear, with some cloudiness at night and fogs along the coast. Bean harvesting and thrashing are progressing in Santa Barbara county and the crop is reported considerably lighter than last season's. A good crop of grain has been harvested and thrashed in the vicinity of Santa Maria. Walnuts are beginning to open. Peach drying is nearly completed. Grape picking and curing are progressing, though somewhat retarded by the scarcity of labor. Melons are plentiful, but of inferior quality. Citrus fruits continue in excellent condition.

EUREKA SUMMARY.—The weather during the past week was favorable for crops, except in the interior where soil is dry, and rain is much needed. Vegetables are in good condition and plentiful. Apples are coloring rapidly and picking is in progress.

LOS ANGELES SUMMARY.—Sugar beet harvest is on. Oranges have fallen more than usual, but prospects are for a fair crop.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, September 24, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall to Same Date Last Year	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	.12	.35	1.87	1.21	70	46
Red Bluff.....	.00	.00	1.50	.66	90	54
Sacramento.....	.00	T	.58	.23	78	51
San Francisco.....	T	T	.7	.28	82	52
Fresno.....	.03	T	.10	.28	94	52
Independence.....	.00	.29	.42	.27	84	46
San Luis Obispo.....	.00	T	.28	.34	84	46
Los Angeles.....	.00	T	.08	.12	84	52
San Diego.....	.00	.90	.08	.11	72	56
Yuma.....	.00	.11	.22	.66	100	62

HORTICULTURE.

Olive Culture.

By MR. R. C. ALLEN of Bonita, San Diego County, at the University Farmers' Institute at San Diego.

The olive occupies a peculiar position among the fruits grown in California. Although its history extends over the entire period since the first settlement of the Franciscan missionaries, yet it remains to-day one of the doubtful quantities concerning whose future we find great diversity of opinion. Why is it that this long experience and familiarity with the tree should leave us in a quandary as to the place which this fruit will finally occupy in the horticultural family of California?

WHAT WAS EXPECTED.—Olive culture has been undertaken in a different spirit from the other branches of fruit grown. Sentiment and theory have been active factors in the propaganda of planting, further than a sober and businesslike attempt to fill an active demand for the product.

The olive is the most famed of fruits. Whether in the sacred literature of Palestine or the classic literature of Greece and Rome it stands pre-eminent. It appeals to the imagination of everyone. The large place occupied by this fruit in the food economy of the people of southern Europe; the tremendously long figures which are required to express the product and consumption of Italy, France and Spain have led us to hope that the people of the United States were waiting open-mouthed for our health-giving product. We did not reflect how long it would be before the Yankee workman would give up the habit of generations and replace apple pie with black olives and bread. It would be a good thing for his digestion and our pocketbook if he would do this, but custom is a hard thing to change, and he probably cares more for his palate than his stomach, anyway.

The truth is that the American people are not yet olive eaters. The habit is growing and in time will require a large product to supply its demand; but when we try unduly to force consumption we do so at least to the temporary discomfort of our bank account.

TOO LARGE FOR PROFIT.—I have had occasion to journey about considerably this summer in southern California, and often in the most unlikely spots—so far as accessibility to markets is concerned—I have stumbled across olive orchards running up into hundreds of acres each. The general answer to the question of how it pays is that we can't afford to pick the crop. This state of things causes one to reflect as to what theory the planter could have had in mind when he went into the business on such a large scale. Especially is this so when we come to find that many of these large orchards were set out in varieties which are only suitable for making oil; and, if anything has been demonstrated in California fruit culture, it would seem to be that we can not afford to grow olives simply for oil. With an average crop, after paying expenses of growing, picking and hauling to mill, the price which the mill owner can afford to pay leaves too small a margin to suit the ordinary grower.

It seems pretty clear to me that the evolution of the olive industry will lead to small orchards, carefully tended, where the main product will be a high grade of pickling fruit, and the by-product of small fruit and culls will go for oil.

ROOM AT THE TOP.—I remember that two or three years ago Prof. Wickson was speaking to us at one of these institutes of the necessity in fruit culture of growing the best. It is the old story that there is always room at the top. He illustrated this by saying that while the average peach crop was going begging at about \$15 a ton, some growers, who had the right varieties and had obtained large size by careful thinning and the best of culture in every way, could not supply the demand for their product at \$55. I think the same state of affairs will hold true with olives. I have known the time when there was a superabundance of fine pickling olives. Such fruit has ordinarily sold at \$100 per ton, and seldom, if ever, below \$80, while oil olives this year sold at \$40, and even lower.

PICKLES.—The sale of California ripe pickled olives is constantly increasing in the country at large, though up to the present time the demand outside of California is practically confined to the large Eastern cities. It mostly springs from those who, as tourists, have eaten them while in this State. This demand is a matter of slow growth and can not be forced too rapidly without heavy loss on the part of the shipper.

Uncertainty and irregularity in the quality of the product is a chief cause in the slowness of our olives in winning a place for themselves in the market. If all California olives shipped East had been uniformly good and sound—safe for the middleman to keep and handle—there can be no question but what the sale for them would now be many times what it is. However, the demand does grow, and the shipper with experience learns to know what stock is safe to ship and what must be sold on the local market. There is reason for confidence that ultimately the market for pickles will assume considerable proportions. The

product has the strong advantage of being without competition, as it stands in an entirely different class from the green imported stock. If the time should ever come when the consumption of the entire country should be in proportion to that in this State, the industry of producing them would be one of magnitude.

So far I have spoken only of ripe pickles. During the past few years some packers have been putting up green pickles and have found a good market for them in this State. Those, of course, come in direct competition with the imported stock, and so far I have never seen any which were anything so attractive in appearance. As imported stock of small size sells for very much lower prices than what we obtain for our ripe pickles, I should doubt very much whether we can compete with it successfully in the Eastern markets. The foreigners have some method of coloring their green olives so as to give them a uniform and attractive appearance. It must be perfectly harmless, since it has been in use probably for generations, and it has never been suggested that any injury ever came from its use.

COLORING OLIVES.—This leads me to speak of coloring black pickles, about which so much has been said during the past year. It was charged that a certain firm in Los Angeles used aniline dye in order to give their olives a uniform black color, in imitation of the natural color of black split olives. There can be no question that we ought to condemn and prevent by any legal means the use of chemicals injurious to health in food products; but it is difficult to understand why it is more reprehensible to color olives black by a harmless method than it is to color them green. As I have said above, we have eaten artificially-colored imported olives all our lives, and it has never occurred to any of us to raise an objection; yet when Prof. Hilgard suggested an equally harmless method of giving them a black color, a perfect storm of abuse was directed against him. As he stated, the use of minute quantities of copperas in coloring is not nearly so injurious to the health as the use of sulphur in coloring dried fruit; yet the latter custom is practically universal. The use of copperas in olives is to be deplored, not because it is injurious to the health, which it is not, but because even the smaller dose, which will give the desired result in color, injures the flavor of the olive. That delicious nutty taste which is the cause of the popularity of our ripe olives is lost, and, obviously, if we adopt this practice we run the risk of killing the goose that lays the golden egg. If copperas is used at all, it should be with greatest caution. It will be better for all concerned if the public can be educated to accept the natural variegated color.

THE OIL SITUATION.—While the future of our pickles is full of encouragement, the same can not be said with regard to oil. Pure olive oil can be bought in this State to-day at \$2 per gallon. Oil can not be manufactured and sold at this price and yield a profit to the grower. To begin with, the tree is not a steady or a heavy bearer. I doubt whether any good-sized orchard in southern California can show a record of production for ten years averaging one ton per acre per annum. Yet it would have to do better than this to be attractive for investment as an oil producer.

Doubtless, many individual oil makers will get restricted markets which will pay them better prices than this, especially where they maintain a high reputation for their best stock bottled under their own brands. Such markets, however, can not reasonably be expected to form an outlet for a large product. Most of us have tried to place oil on the Eastern market and have been discouraged at the progress made. The imported oil, adulterated though it is, is skillfully made and put up attractively, and the average consumer can not tell whether it is pure or not. I noticed the other day in a report from New York that California oil was gaining in favor, but that they could not use stock bottled at this end, because of the greater cost of glass, etc., here. Hence the demand was wholly for bulk goods. The reason for the preference may be as stated, but I am inclined to think it more likely that the desire of the purchaser to adulterate the oil in the East is the real ground for it. He can add an equal bulk of cottonseed oil and still have an article fully up to the average purity of imported goods.

VARIETIES.—If I am right in thinking that the hope of olive culture lies rather in the production of pickles than of oil, then it follows that in planting one should set out varieties valuable for pickling and preferably such as are suitable for both purposes. I think there is a pretty general consensus of opinion that the Mission is the best all-around variety. It is best suited for ripe pickles, and everything that can't be used for this purpose can be made into oil. It is claimed—and it is doubtless true—that there are other varieties which give a more delicately flavored oil; but so long as we find difficulty in getting people to distinguish and pay the difference between pure oil and that which is half cottonseed, refinements like that can hardly be worth taking into account. The Mission certainly makes a very fine oil, even if not the best possible.

Such varieties like the Manzanillo, which promised great excellence, have no commercial value, owing to being subject to an internal rot as they ripen. Thus they can be used only for green pickles. The large

varieties—known to the trade as Spanish Queen olives—have the same limitation, though they may prove to have enough value for this purpose to justify planting. Large size generally counts in fruit, and when we learn to put up olives of this type as well as they do in Spain, I shall expect them to give a good profit. The Columella has a real merit, and anyone who intends to make a specialty of pickling ought to plant at least a small portion of his orchard to them. They part easily with the bitter principle and make exceptionally firm, sound pickles of a type entirely distinct from the Mission. I have had no experience with them personally, but those who have tell me that they keep perfectly from year to year.

IRRIGATION.—It is probably a misfortune that the olive is so exceptionally hardy a tree, maintaining life under every adversity. This characteristic has led to the planting of large orchards on poor soil and where they can not be irrigated. Because a tree will grow under adverse conditions, it does not follow that it will thrive, and unless a fruit tree of any kind does thrive, it is safe to conclude that it will not pay.

The olive orchard should be irrigated and have the same careful attention that one expects to give to a citrus orchard, and only under such conditions is it reasonable to expect it to give good results.

PESTS.—So far in this county, and, I think, in southern California, the only enemy which troubles the grower is black scale, with which the tree is a great favorite. Fortunately, however, the little black Australian ladybug, (*Rizobius ventralis*), together with other parasites, keeps it in subjection, so that for many years I have not found it necessary to spend any money in keeping the orchard clean enough for practical purposes. The new internal parasite coming from South Africa will, if what we hear about its work proves true, be a still more efficient friend.

The olive knot, which has caused alarm in the northern and central part of this State, and the olive fly, the most dreaded enemy in Europe, have so far left us in peace, so that with us, at least, the olive industry is rather fortunate in respect to pests, as compared with most branches of fruit growing.

THE FUTURE.—To sum up, I believe that olive culture will continue with us. While certain colossal mistakes will remain as warnings to posterity, from this time on we may expect a slow and steady growth in proportion as the market expands. It seems to me unwise for the planter to make the olive orchard his sole means of support. It is, and always will be, an erratic bearer. The testimony of centuries of experience goes to prove this. However, the same thing is true of the apple, which is by general consent the king of fruits. In New England you rarely find a farmer who relies exclusively on his apple orchard for a living, yet you rarely find a farm without its apple orchard.

So it may prove with us here in southern California with the olive. A small orchard, well watered and well tilled, will be a source of profit and satisfaction; a large one, where the same attention of detail can not easily be given, too often of sorrow and regret.

THE DAIRY.

Dairy Farming.

By MR. CHESTER GUNN at the University Farmers' Institute at Lakeside.

To succeed in the dairy business, we must: First—Have good dairy cows. Second—We must be near our market, or on the line of a railroad, so we can send our milk, cream or butter to market at the least cost. Third—We must have land where we can raise our feed of the right sort, so as to avoid paying out too much of our income for concentrated feeds, beans, oil cakes, etc. We must also have good clean water and plenty of it; not in holes for the cows to wade into and make it foul, but in troughs, where it can be kept pure and clean.

BREEDS.—You must be your own judge of the breed that will suit you best. The fact is that there is very little difference between the different dairy breeds in the cost of producing a gallon of milk or a pound of butter, but I would advise you to select that breed of cows which you like the best, for you will surely give them the best care and take more interest in their welfare.

FEEDS.—The cost of keeping cows varies with the individual cows kept, also with the kinds of feed fed, how they are fed, and whether we have to buy concentrated food to balance our ration, or whether we raise such foods as will furnish us with a balanced ration.

Let us remember while feeding our cows that it requires a large amount of food which the cows eat to repair the waste of energy. The further your cow has to travel, and the higher the hills she has to climb to get her food, the more food is required to repair the wasted energy, and that our profit from that cow comes from the food which is eaten in excess of the amount taken to repair this waste. We must also bear in mind that it is only that part of the food

which the cow can digest which is of value, and the milking qualities of a cow depend largely on her power to digest and to assimilate her food.

The daily ration of a cow of 1000 pounds weight should contain $2\frac{1}{2}$ pounds of protein, 12 to 13 pounds of carbo-hydrates, and $\frac{1}{2}$ to $\frac{3}{4}$ pounds of crude fat, all in digestible form.

The protein is the most expensive, and is used to form the hair, horns, hoofs, muscles and lean meat, also the casein of milk. The carbo-hydrates furnish the heat for the body of the animal, also the energy; they form the largest part of all vegetable foods, and are stored in the cow as fat. The ether extract is either burned in the body to produce heat, or is stored as fat.

A good dairy cow cannot eat enough coarse fodder to do her best unless it carries a large percentage of protein. Such a food is alfalfa, and I believe it the best cow feed we can grow, if we can grow it, on our farms, as it is possible for a cow to eat enough to make a balanced ration, or very near it. Oats cut green make a very good cow feed, but you should add some other food carrying protein to balance your ration such as bean or cotton-seed oil. Green corn fodder is also good, but you must add both protein and carbo-hydrates to balance it.

Good alfalfa hay carries about the same amount of protein and carbo-hydrates as bran, but not so much fat. Let us remember that the secret of economical feeding consists in feeding just enough, and no more, of each of the digestible nutrients named above; otherwise any excess will be voided and lost. A cow should never be fed more than she will eat up clean at the time. If she has feed left over to breath on she will not eat it. She will eat more if not fed too much at a time.

If your cow inclines to get too fat and don't make milk of her food, she has been spoiled for the dairy by the way she was fed while young; that is, if she comes from good dairy stock, and it will be best to make beef of her. But if she shows signs of losing flesh, everything going to milk, her ration of carbo-hydrates should be increased by feeding some rolled barley, corn or other heat and fat producing food. Each cow must be fed all that she will eat and keep in the same flesh, and turn the rest of her food into milk.

Green, succulent food is the best for producing milk, and is the most natural food for the cow, but we cannot well have it all of the time in this dry climate without water and alfalfa, and then there will be a time when it would pay to have a silo full of corn fodder to help out, even if we do not have to feed bought protein.

CARE.—Next to feeding is regularity in feeding and milking; the feeding should be done at the same time every day, as the cow will expect her food when the time comes for her to have it, and if she don't get it she will worry and fret till she is fed, and she won't do her best. She should also be milked at regular times each day, and in the same order and by the same person. No cow will do her best if you continually change time of feeding, time of milking and milker.

Treat your cow kindly; don't kick her or pound her with your milk stool if she don't put her foot back when you tell her to. Don't scare her, nor in any way cause her to fear you if you want the best results. Keep a testing machine and test and weigh the milk from each cow at regular intervals, and dry up and beef all cows that don't come up to the proper standard. It costs as much to feed a 1% cow as a 40% cow.

EXPERIMENT.—At the Illinois experiment station a complete record in detail was kept of the result of feeding two grade cows of no particular breed, one nine years old, the other six years old. These cows were fed through the year as nearly alike as possible, and there was a very slight difference, less than 300 pounds in the amount of nutrients consumed by each, and yet one of these cows produced $564\frac{2}{100}$ pounds of butter fat, and the other $298\frac{1}{100}$; one cow gave 266 pounds more butter fat than the other cow on practically the same feed. Figuring the butter fat at 25 cents per pound, one yielded \$141.20, the other \$74.76, or a difference between the two cows of \$66.54.

MILKING.—Dry your cows up two months before calving, and don't use the milk for two or three days after calving.

The dust should be brushed from the sides and udder of the cow, and the udder should be rinsed with clean water and dried with a clean cloth before milking, it will keep out dust and filth from your milk and your milk will keep sweet much longer; besides it will soften the teats, leaving them much more pliable and the milking will be easier. Above all things don't dip your fingers in the milk to soften the teats, it is a vile practice; milk with dry teats always. Remove the milk from the barn or yard as soon as possible, as it will absorb the vile odors very fast and spoil its flavor and keeping qualities. The quicker you cover your milk the longer it will keep.

Never cover your milk cans while the milk is warm, it may develop a poison and it will spoil much quicker.

Observe the utmost cleanliness about the cows, their attendants, the dairy and all utensils used.

Clean, pure water and plenty of salt should always be where the cows can get at it.

Do your milking quickly and quietly, and stop when you are done; don't sit and strip and strip after you have got all the milk, and don't save the first few streams of milk.

The last census shows an increase of 22% in the population of this country during the past ten years, while it only shows an increase of 4% in the milk cows. Surely there is a bright future for the intelligent breeder of dairy cows.

New Dairy Instructor at the University.

Mr. E. F. Major, of the University of Minnesota, has been called to Berkeley to take charge of the dairy department. He succeeds Professor Leroy Anderson, who has resigned to become director of the new State Polytechnic School at San Luis Obispo. A model barn is being erected on the University grounds and a herd of twenty-five cows will be installed there.

Mr. Major was born on the Island of Jersey, and for the past eleven years has been at the University of Minnesota, first as a student and later as an expert in dairying. He has had varied practical experience in the management of the herd and in scientific investigation in animal industry.

The short course in dairying, to be given at the University from October 7th to December 18th, will be under Mr. Major's direction. The short course students will make butter and cheese in the well equipped University creamery, and will be instructed in the science of the subject, and in laboratory methods.

TO CALCULATE the working energy that a given volume of water under a given head or fall is capable of producing, is determined by the weight and velocity of the water. The weight is an unvarying factor, a given quantity always weighing the same, but the velocity varies according to the height of column or head. The initial velocity of spouting fluids is directly as the square roots of the heights of the columns, or of the pressure, the initial velocity under a 4-foot head being 16.2 feet per second, and, the square root of 4 (2); to ascertain the spouting velocity of any other height, take its square root, divide it by 2, the square root of the 4-foot head, and multiply it by 16.2, the spouting velocity of the 4-foot head. With a head 16 feet high the square root is 4; divide by the square root of 4, which is 2, multiply by 16.2, and, as a result, we have 32.4, which equals the spouting velocity due to a 16-foot head of water. By the same rule is found that the spouting velocity due to a head 64 feet high is 64.8, for the square root of 64 is four times greater than the square root of 4, therefore the velocity must be four times greater than the velocity due to the 4-foot head. The initial spouting velocity of any other head of water can be ascertained by the same method of calculation. Measured by spouting velocity alone, it would appear that there is a relative loss of power as the height of the column of water increases. A 64-foot head is sixteen times the height of a 4-foot head, and yet the spouting velocity of the former is but four times greater than the latter. It must be remembered, however, that while the spouting velocity has been increased but fourfold, the pressure has been increased sixteenfold, so that against, say, one velocity and one pressure in the 4-foot head, there is in the 64-foot head four velocities and sixteen pressures, which means great increase in power, instead of a relative decrease. Thus a water wheel which would develop 2 H. P. under a 4-foot head, would develop 128 H. P. under a 64-foot head. Thus it will be seen that by raising the head sixteen times the power is increased sixty-four times. It is due, however, to say that, while theoretically the power is increased sixty-four times, the efficiency of the wheel under the high head is not in so great a proportion, on account of increased friction due to its greater speed. The speed of a wheel increases with the velocity of the water, therefore the speed of a wheel under a 64-foot head would be four times greater than it would be under a 4-foot head. This brings up another phase of the subject. While the 64-foot head develops four times as much power as the 4-foot head, four times as much water is consumed in doing it. When a given quantity of water is consumed in both cases, the power of the 64-foot head is but sixteen times that of the 4-foot head, or in exact ratio to the heights of the head. That is: A given quantity of water in a 64-foot head will develop sixteen times the power that it would in a 4-foot head, because the former head equals sixteen times the height of the water.

THE eastern Washington wheat growers are said to be having their innings this year. It is telegraphed from Tacoma that the large wheat crop now being harvested, together with its sale at good prices, is having a marvelous effect in rehabilitating the fortunes of farmers who became discouraged several years ago and all but lost their farms on mortgages. The big crops of last year and this year have enabled these farmers to pay their debts and many of them now have good bank balances, or money out at interest. This has the cheery sound of a boom bugle. We hope there is more in it than that, however.

THE pressure on any perpendicular exposed surface occasioned by wind can be figured in pounds. The square of the velocity in miles per hour $\times .005$ = the pressure in pounds by square foot; so that a wall 15 feet wide and 20 feet high would have a total pressure against it produced by a 40-mile wind of 2400 pounds. Conversely, the velocity of wind can be figured from the observed pressure by the formula $\sqrt{200 \times \text{pressure in pounds per square foot}}$. For instance, a wind pressure of 8 pounds per square foot would show $200 \times 8 = \sqrt{1600} = 40$ miles per hour.

FORESTRY.

The Relation of Forestry to Agriculture.

By MR. T. P. LUKENS of Pasadena at the University Farmers' Institute at San Bernardino.

War nor pestilence has ever wrought such destruction, nor caused so much suffering nor loss to humanity, as the irrational destruction of forests. Blinded with greed for immediate gain, our forests are destroyed. The forestry movement in the United States is to avert the calamity that other nations have experienced, by rational methods of harvesting to perpetuate our forests.

No one can mingle with trees and not be bettered. It is there we meet the birds, vieing with the winds and rippling waters in sweetest song; for these alone should they be defended. But there is a crisis approaching, and near at hand, wherein our very existence is threatened, to avert which will require the united, unselfish effort of every good citizen.

History gives no instance of ruined cities being discovered in a wooded country; always on a desolate, treeless plain or hill, as in parts of Asia Minor, Greece, and even in our own Arizona. But not so when the cities were builded; the hills and mountains were well covered with trees, while the plains and valleys were rich in crops nourished by bountiful rains, induced and conserved by the forests. All has been destroyed by the improvident acts of man, bringing about a desolation equal to that of the moon.

The forest is the mother of the stream; without forests there can be no irrigation, and without forestry there can be no forests. Forests are a heritage to us, planted and reared by God for all mankind, and for all time to come. We have no right to rob the unborn of its rights in this great heritage, but should deliver it to our successors unimpaired.

Like the mortgage with accumulated interest, we are liable to foreclosure unless we deal squarely with posterity.

WHAT FORESTS DO.—How forests beneficially affect a climate, how they supply equable humidity, how they afford extensive shelter, create springs, and control the flow of rivers—all this the teachings of science, the records of history, and more forcibly still, the sufferings or even ruin of numerous and vast communities, have remonstrated in sad experiences, not only in times long past, but even in very recent periods. In what manner their humid atmosphere and their feathered singers effectually obstruct the march of armies of locusts in the Orient, or hinder the progress of other insects; how the forests as slow conductors of heat lessen the temperature of warm climes; how forests as ready conductors of electricity much influence and attract the current of the vapors, or impede the elastic flow of the air, with its storms and its humidity, far above the actual height of the trees, and how they condense the moisture of the clouds by lowering the temperature of the atmosphere, has over and over again been ascertained by many a thoughtful observer.

In what way the forests shelter the soil from solar heat and produce coolness through radiation from the endlessly multiplied surfaces of their leaves, and through the process of exhalation; how in the spongy stratum of decaying vegetable remnants they retain far more humidity than even cultivated soil; how they with avidity re-absorb the surplus of moisture from the air, and refresh by a never-wanting dew all vegetation within them and in their vicinity, has been explained, not only by natural philosophy, but also by observation of the plainest kind. How forest trees by the powerful penetration of their roots decompose the rocks, and force unceasingly from deep strata the mineral elements of vegetable nutrition to the surface; how they create and maintain the sources for the gentle flow of water courses for motive power, aqueducts, irrigation, water traffic and navigation; how they mitigate or prevent malarious influences—of all this we become cognizant by daily experiences almost everywhere around us. We have to look, therefore, far beyond a mere temporary wood supply when we wish to estimate the blessings of forest vegetation rightly, and our mind has to grasp the complex causes and sequences originating with and depending on the forests before their value as a total can be understood.

A GREAT QUESTION.—The question of the management of our depleted and rapidly disappearing forests is second to no other in importance to the people of the United States. No nation on earth was so blessed in the beginning with the extent and quality of forests as our own, but through lax laws and political influence the mass of our forests have passed into the hands of a few. Not only is the waste and destruction of the original crop distressing, but also the entire disregard of the future has been thus far the rule.

While the economic question of forestry is of vital importance to the whole people, on which volumes could be written, the phase of this question which most concerns the people of southern California is the preservation of our forests for the conservation of water.

(TO BE CONTINUED)

California and Oregon State Fairs of 1902.

Written for the PACIFIC RURAL PRESS by F. P. Cook.

The California State Fair, in routine official management, was a great success. In the character of the exhibit, it was a spotted success. The attendance was slim, judging from appearances.

The reasons given for the slim attendance were varied—as varied as the sources from which they came—and interesting. The cigar dealer, in front of a saloon with gaming attachments, declared it was because Sacramento is a "closed" town; the farmer in the vicinity of Sacramento, who drives to the Fair in his family rig with his family, declared that it would be better if there were trees in the race-track park, in the midst of which hundreds of rigs and families like his could gather and watch the races from beneath the shade; the California inventor and manufacturer, who had been beaten for the sweepstakes medal of his class some time in the past by what he called a "store show" of many goods manufactured in other States, as well as some made in California, declared he was not there this year because he considered such competition unfair; the native son said he'd like to be excused a few days, this time, he had to attend the annual N. S. G. W. reunion at Santa Rosa; and the old-timer, who used to help work up county exhibits, declared his belief that when the management transferred \$1500 from that purpose to the racing fund, it did much to destroy the Fair as it was designed to be, and popular interest in it.

Notwithstanding this "tired feeling" in the State at large, as shown in the attendance, the racing was very fair, and the people who did not find their way into the grand stand kept the pool-sellers pretty busy. The cattle show was the largest and best that has been on the grounds for years; and, drawn together, as it was, by interest and expectation of good things from the judge, exhibitors went away generally satisfied with some information they felt to be useful and a compensation for their time and money, and with a feeling that an award there gained was worth something.

The show in the Pavilion was brilliant. With music, entertainments for the eye and refreshment booths, the evenings there took on the nature of social functions. In mercantile lines the displays were splendid, especially in personal wear and house furnishings. In farming and dairy utensils it was good; in horticulture there were a few excellent displays; in agriculture—the products of the field and farm—it was practically nil. The poultry pavilion showed up well the second week. Besides all these, there were some useful things and some curiosities.

ENTRIES.

Nothing shows better the character of the State Fair this year than the entries and awards in the stock department.

CATTLE.

SHORTHORNS, OPEN CLASS, FREE TO ALL.—Joe Marzen, Lovelocks, Nev.; California Pastoral & Agricultural Co., Ltd., Merced; Baden Stock Farm, Lakeville; Estate of Wm. H. Howard, San Francisco; J. H. Gilde & Son, Sacramento; R. M. Dunlap, Newham.

SHORTHORNS, STATE CLASS.—Same entries as above, and P. H. Murphy, Perkins.

HOLSTEINS OR FRIESIANS.—F. H. Burke, San Jose; Hewitt & McNulty, Selma; Pie de Land & Stock Co., Stockton.

JERSEYS.—R. D. Button, Cottons, N. Y.; Henry Pierce, San Francisco; C. V. Osborn, Elk Grove; Chas. C. Perkins, Sacramento; W. K. Shafter, San Francisco.

AYRESHIRE.—Geo. Bement, East Oakland, one cow.

HERD SWEEPSTAKES FOR BEEF BREEDS.—Joe Marzen, Lovelocks, Nev.

GRAND SWEEPSTAKES FOR BEEF BREEDS.—Same entries as for Shorthorns, open class.

HERD SWEEPSTAKES FOR STANDARD DAIRY BREEDS.—Hewitt & McNulty, Selma; Henry Pierce, San Francisco; Pierce L. & S. Co., Stockton; Geo. Bement, East Oakland.

GRAND SWEEPSTAKES FOR ALL DAIRY BREEDS.—Same entries.

HORSES.

THOROUGHBRED.—W. R. Randall, Great Falls, Mont.; E. W. Purser, San Francisco; Mrs. E. S. Smith, Sacramento; Miss Sooman, Sacramento; Alf Josephs, San Francisco; Miss Cunningham, Sacramento; Frank Daroux, Sacramento; Mrs. H. London, San Jose.

STANDARD TROTTERS.—Mrs. L. B. Palmer, Stockton; John Ashley, Chico; Tuttle Bros., Rocklin; Wm. Hendrickson, San Francisco; Tom James, San Jose; Gablian Stock Farm, Salinas; S. C. Tryon, Sacramento; P. B. Avey, Rio Vista; F. M. Hammett, Watsonville; Mrs. E. W. Callendine, Sacramento; La Sista Ranch, San Jose; S. W. Mitchell, Sacramento; W. H. Lumsden, Santa Rosa.

ROADSTERS.—Geo. A. Reed, San Jose; C. A. Arbedson, College City; W. O. Bowers, Cook & Quinton, W. H. Harris, J. E. Terry, J. H. McMullen, W. J. Irvine, Dr. P. F. Pendery, John Baicher, S. H. Farley, C. J. Pearl, Jr., Sacramento; P. F. Avey, Rio Vista; Silas Richly, College City.

COACH.—H. H. Wilson, Marysville; H. S. Moddison, Broderick.

CARRIAGE TEAMS.—T. L. Dardis, Stockton.

ROADSTER TEAMS.—J. W. Wilson, A. H. Anderson, Sacramento.

ROADSTER TEAMS AND RIGS.—C. H. Clark, Mrs. H. S. Buckman, Sacramento.

DRAFT, NORMANS AND PERCHERONS.—Clyde Chipman, Covina.

ENGLISH SHIRES.—W. B. Hardman, Volta; McCormick Bros., Rio Vista.

HORSES, MISCELLANEOUS.—Dr. J. H. Shibley, Sacramento; Jos. Marzen, Lovelocks, Nev.; Gablian Stock Farm, Salinas; G. E. Smith, Petaluma; McCormick Bros., Rio Vista; Napa Stock Farm, Napa; H. S. Moddison, Broderick; John Asher, Chico; Tuttle Bros., Rocklin; W. M. Amer, Madera; Mrs. G. A. Keatler, S. U. Mitchell, B. C. Treffry, I. Christie, Frank Ruhstaller, Sacramento; J. C. Hess, Chico; H. H. Wilson, Marysville.

SADDLE.—E. E. Maxwell, H. O. Buckman, Sacramento.

PONIES.—E. M. Leitch, Dr. B. F. Pendery, Sacramento.

JACKS.—Blackwell & Berdoni, Rocklin.

SHEEP.

FRENCH MERINO.—J. H. Gilde & Son, Sacramento.

SOUTHDOWN.—Thomas Waite, Perkins; Geo. Bement, East Oakland.

SHROPSHIRE.—J. H. Gilde & Son, Sacramento.

HAMPSHIRE DOWNS.—J. H. Gilde, Sacramento.

PERSIAN SHEEP.—C. P. Bailey, San Jose.

ANGORA GOATS.—C. P. Bailey, C. E. Bailey, San Jose.

SWINE.

BERKSHIRE.—C. C. Perkins, Sacramento; W. R. Shafter, San Francisco; C. W. Reed, Sacramento; Tbos. Waite, Perkins; Sessions & Co., Los Angeles.

ESSEX.—Faton & Shaw, Cosumnes; Geo. Bement, East Oakland.

POLAND-CHINA.—Sessions & Co., Los Angeles; S. P. Lindgren, Kingsburg; W. R. McCaslin, Cosumnes; Clyde Chipman, Covina; P. H. Murphy, Perkins.

DUROC-JERSEY.—W. R. Shafter (Bakersfield), San Francisco.

SPECIAL CHESHIRE.—R. D. Button, Cottons, N. Y.

O. I. CHESTERS.—A. Gordon, Donlan Bros., Hueneme.

AWARDS.

The judging by Prof. Carlyle of Wisconsin University Agricultural College on cattle, hogs, sheep and goats was the most satisfactory feature of the Fair to stock exhibitors and interested spectators, unless it may have been the little talks from him setting forth the points on which judgment was made, which were full of information for those who heard and were much appreciated. The quality of the decisions in all cases, and the decisions themselves in nearly all cases, were cordially approved by the exhibitors. In only one or two close cases did they continue to adhere to their previous opinions. The judging made stock men feel that they had not come in vain, and gained for Prof. Carlyle many personal friends. The public judgment on him was, "He'll do." Awards were as follows:

CATTLE.

SHORTHORNS, FREE FOR ALL.—Bulls: Best of age, Blythe Victor, Marzen; second, Davenport Duke, C. P. & A. Co.; best 2-year-old, Inwood Chief, Howard; second, Silver Knight 8th, Marzen; best 1-year-old, Marshall's Combination, Marzen; second, Royal Fashion, Howard; best calf, Valley View 4th, Dunlap; second, King Spicy 3th, Howard.

Cows: Best of age, Lady Elgin 4th, Marzen; second, Humboldt Maude 6th, Marzen; best 2-year-old, Hopeful 57th, Howard; second, Amelia B. David 19th, Marzen; best 1-year, Hopeful 61 h, Howard; second, Humboldt Rose 7th, Marzen; best calf, Duchess of Humboldt 4th, Marzen; second, Yolo Duchess, Gilde.

Herds: Two years and over, one male and four females, owned by one person, Blythe Victor, Lady Elgin 4th, Miss Kate Leslie, Humboldt Maude, Beauty H. 2d, Marzen; under 2 years, Marshall's Combination, Humboldt Rose 7th, Madame Maude 16th, Water Crystal 2d, Duchess of Humboldt 4th, Marzen; under 1 year, Chief of Valley View 5th, Hopeful 72d, Hopeful 71st, Pansy 2d, Mary 3d, Howard.

SHORTHORNS, STATE CLASS.—Bulls: Best of age, Davenport Duke, C. P. & A. Co.; second, Baden Duke 4th, Baden Stock Farm; best 2 years, Inwood Chief, Howard; second, Nevada Boy 3th, Gilde; best 1 year, Royal Fashion, Howard; second, Billy Beaumont, P. H. Murphy; best calf, Chief of Valley View 4th, Dunlap; second, King Spicy 3th, Howard.

Cows: Best of age, Sharon Rose of Maple Hill, Gilde; second, Lady Newham 12th, Baden Stock Farm; best 1 year, Hopeful 57th, Howard; second, Ramona 10th, Howard; best 1 year, Hopeful 61h, Howard; second, Louise 2d, C. P. & A. Co.; best heifer calf, Yolo Duchess, Gilde; second, Hopeful 72d, Howard.

Herds: Best 2 years and over, Inwood Chief, Hopeful 57th, Mystery 29th, Ramona 10th, Philomena 54th, Howard; best under 2 years, Royal Fashion, Victoria 12th, Dandelion 25th, Hopeful 64th, Hopeful 63d, Howard; best calf, Chief of Valley View 5th, and same heifers as in open class, Howard.

Sweepstakes for both classes: Best bull, any age, Blythe Victor, Marzen; best cow, any age, Hopeful 57th, Howard.

HOLSTEINS.—Bulls: Best of age, Mechthilde of L. S., Burke; second, none; best 2 years, Pieterje King de Kol, Hewitt & McNulty; second, A. & G. Paul de Kol, Pierce L. & S. Co.; best 1 year, The Angelus, Burke; second, Nud ne Bertba J. Monk, Hewitt & McNulty; best calf, Sylvanus Aggie of Riverside, Pierce L. & S. Co.; second, Beryl Waynes Paul de Kol of R. Pierce L. & S. Co. **Cows:** Best of age, Fidessa, Pierce L. & S. Co.; second, Nudine Cloverda e, Hewitt & McNulty; best 2 year, De Natsey Bauer, Pierce L. & S. Co.; second, Mabel Haskins Mechthilde, Pierce L. & S. Co.; best 1 year, Carlissa, Burke; second, Wayne Pauline de Kol, Pierce L. & S. Co.; best heifer calf, Olympia of Riverside, Pierce L. & S. Co.; second, Mattie Way, Hewitt & McNulty.

Herds: Best over 2 years, Pieterje King de Kol, Nudine Cloverda e, Kaastra Clothilde, Robbe of Dehurst, Maid of the Valley, Hewitt & McNulty; best under 2 years, Mechthilde Paul de Kol's Paul, Wayne Pauline de Kol 2d, Pieterje Wayne de Kol 2d, Calamity Jane Hengerveld de Kol, Carotta Royal Pieterje 3d, Pierce L. & S. Co.; best calves, Beryl Waynes Paul de Kol of Riverside, Kathleen's Beauty of Riverside, Olympia of Riverside, Mechthilde of Louisa of Riverside, Beryl Waynes Pieterje of Riverside, Pierce L. & S. Co.

Swepstakes: Best bull, any age, Mechthilde of La Siesta, Burke; best cow, any age, Fidessa, Pierce L. & S. Co.

JERSEYS.—Bulls: Best of age, Kathleen's Roy of Yerba Buena, Henry Pierce; best 2 year, Hinman of Mendendale, R. D. Button, Cottons, N. Y.; second, El Bravo of Y. B. H. Pierce; best 1 year, Golden Rose, H. Pierce; second, Duke Onyx, C. V. Osborn; best calf, Waremont, H. Pierce; second, Escoville, H. Pierce.

Cows: Best of age, Rosalie of Y. B. W. R. Shafter; second, Cressy of Y. B. H. Pierce; best 2 year, Pink of Y. B. H. Pierce; second, no name, Button; best 1 year, Dovecatheon of Y. B. H. Pierce; second, none; best heifer calf, Chandros of Y. B. H. Pierce; second, Ruby of Y. B. H. Pierce.

Herds: Over 2 years, Panwood of Y. B. and four females, H. Pierce; best under 2 years, San Pablo and four females, H. Pierce; best calves, Claremont and four females, H. Pierce. **Sweepstakes:** Best bull, any age, Kathleen's Roy of Y. B. H. Pierce; best cow, any age, Rosalie of Y. B. H. Pierce.

AYRESHIRE.—Best cow, any age, Tildy B., George Bement.

HERD SWEEPSTAKES FOR BEEF BREEDS.—Blythe Victor, Lady Elgin 4th, Humboldt Maude 6th, Amelia B. David 19th, Humboldt Rose 7th, Marzen.

GRAND SWEEPSTAKES FOR BEEF BREEDS.—Best bull, 3 year, Blythe Victor, Marzen; best 2 year, Inwood Chief, Howard; best 1 year, Marshall's Combination, Marzen; best calf, Chief of Valley View 4th, Dunlap; best cow, 3 year, Lady Elgin 4th, Marzen; best 2 year, Hopeful 57th, Howard; best 1 year, Hopeful 61th, Howard; best calf, Hopeful 72d, Howard.

HERD SWEEPSTAKES FOR STANDARD DAIRY BREEDS.—Best over 2 years, Kathleen's Roy and four cows, Henry Pierce; best under 2 years, Mechthilde Paul de Kol of Riverside and four heifers, Pierce L. & S. Co.

GRAND SWEEPSTAKES FOR ALL RECOGNIZED STANDARD DAIRY BREEDS.—Bulls: Best 3 year, Panwood of Y. B. H. Pierce; best 2 year, Pieterje King de Kol, Hewitt & McNulty; best 1 year, Nudine B. J. Monk, Hewitt & McNulty; best calf, Claremont of Y. B. H. Pierce.

Cows: Best 3 year, Fidessa, Pierce L. & S. Co.; best 2 year, De Natsey Baker Pierce L. & S. Co.; best heifer, Dovecatheon, H. Pierce; best calf, Belle Chandros, H. Pierce.

SWINE.

BERKSHIRE.—Boars: Best 2 years and over, none; best one year under 2 years, Rio Bonito Prince, Reed; second, Gentry W. Waite, best 6 months, Black Diamond, Reed; second, Yolo Prince, Reed; best under 6 months, (no name), Sessions; second, (no name), Sessions.

Sows: Best breeding, 2 years, Royal Duchess, Sessions; second, Silver Light, Sessions; best 1 year, Sally Lee, Sessions; second, Diamond W. Waite; best 6 months, Queen Perfection 2d, Sessions; second, Hayter Lass 4th, Sessions; best under 6 months, (no name), Sessions; second, (no name), Sessions; best sow and litter, not less than six of her own, under 6 months, Golden Hell 4th, Sessions; second best, Betsey, Shafter.

Sweepstakes: Best sow, any age, Rio Bonito Prince, Reed; best sow, any age, Queen Perfection 2d, Sessions; best four swine, get of same sow, bred by exhibitor, Sessions; best pen of six pigs, under 6 months, Sessions.

POLAND-CHINA.—Boars: Best of age, Chief Perfection 4th, Sessions; second, Tecumseh, Lindgren; best one year, Chief Guv. McCaslin; second, Gold Son, Sessions; best 6 months, Sheldon, McCaslin; second, Grand Style, Lindgren; best under 6 months, Eureka, Lindgren; second, (no name), Sessions.

Sows: Best blood, 2 years, Midnight, McCaslin; second, Lynwood Queen, Sessions; best 1 year, Prize Tecumseh, Lindgren; second, Little Lee, Sessions; best 6 months, Nona, Sessions; second, Black Duck, McCaslin; best under 6 months, L's Black Hawk, Lindgren; second, Perfect Orange, Sessions; best sow and six pigs, Young Tecumseh Wilkes, Lindgren; second, Wilkes Perfection, Lindgren.

Sweepstakes: Best sow, any age, Chief Perfection 4th, Sessions; best sow any age, Midnight, McCaslin; best four get of one sow bred by exhibitor, Lindgren; best sow and three sows, Lindgren; best pen of six pigs under six months, Sessions.

DUROC-JERSEY.—Boars: Best of age, Jersey Dick, Shafter; best 1 year, Sandy, Shafter.

ESSEX.—Boars: Best 2 years, Ohio Major, Bement; second, Black Fellow, Eaton & Shaw; best 1 year, Black Ben, (no name), Eaton & Shaw; best 6 months, Black Tom, Eaton & Shaw; second, Hannibal, Bement; best under 6 months, Eureka Chief, Bement; second, (no name), Eaton & Shaw.

Sows: Best breeding, 2 years and over, Black Bessie, Bement; second, Squawler, Bement; best 1 year, Black Patti, B ment; second, Black Jennie, Eaton & Shaw; best 6 months, Black Kitta, Eaton & Shaw; second, Gertrude, Bement; under 6 months, Black Swan, B ment; second, (no name), Eaton & Shaw.

Sweepstakes: Boar, Ohio Major, Bement; sow, Black Bessie, Bement; boar and three sows, etc., Oblong, Bement; Squawler and Black Patti, Bement; best four sows, get of one boar, etc., Black Patti, Gertude, Black Swan and Hannibal, Bement; best sow and litter of own pigs, Eaton & Shaw.

CHESHIRE (no competition).—Boars: Best boar, Steuben Boy, Button; best 1 year, Button Longfellow; best 6 months, no name; best under 6 months, no name.

Sows: Best of age, Pan American; best 6 months, Omaha 3d; second, Beauty 4th; best under 6 months, Baldwin Belle; best sow and pigs, Miss Laurie.

OHIO IMPROVED CHESTER.—Boars: Best 1 year, Tom, Gordon; best under six months, (no name), Donlan Bros.; second, (no name), Gordon.

Sows: Best 1 year, Jane, Gordon; best under 6 months, (no name), Gordon; second, (no name), Donlan Bros.; best sow and 6 pigs of her own, Betty, Gordon.

SHEEP AND GOATS.—Prof. Carlyle pronounced the French Merino flock of J. H. Gilde & Son one of the finest and, possibly, the finest in the United States; other showings of sheep ordinary. The Angora goats shown by C. P. and C. E. Bailey, he also said, were a very fine lot and need not fear to show anywhere in the United States. Persian fat-tailed sheep, with which we have some acquaintance here in California, he frankly confessed he knew nothing about.

HORSES.—The horse show at the State Fair this year was mainly made up of thoroughbreds, standard trotters and coach horses. Of those classes of horses adapted for farm work there were few. Among those shown in the latter class were Normans "Annette" and colt, "Kalona" (filly), and an unnamed filly yearling, by Clyde Chipman; and "Cyrus Noble" stallion, by McCormick Bros., of Rio Vista—a noble, fine, dappled gray. Of English Shires, "Scrapton Fashion," (stallion), by W. B. Hardman, Volta, and "Stunting Fen Duke," (stallion), by McCormick Bros. H. H. Wilson of Marysville had twenty horses entered, fourteen of which were coach. In the miscellaneous class, some notably good animals, apparently, were "Uncle Sam" and "Concord," (stallions), from the Napa Stock Farm, and "Champion Jr.," (stallion), by imp. "Champion," (an Australian horse), and his two colts, one out of "Susie," a chestnut filly, and "Pet," from H. S. Moddison's stock farm at Broderick, were splendid animals. The rules for the miscellaneous class do not specify any purpose for such horses with a view to which they may be compared.

Prof. Carlyle did not judge the horses, being obliged to leave for the Oregon State Fair, where he acted as judge.

Some pictures of winners at the State Fair, and descriptions of the herds from which they come, will be given in the next issue of the PACIFIC RURAL PRESS.

THE OREGON STATE FAIR.

The Oregon State Fair at Salem, September 15 to 20, was a great success in the variety and extent of the cattle and farm products shown. That the Shorthorn show was equal in quality to that of California is doubtful, however, and probably was not equal to it in number. The French Merino sheep, also, were nearly equal to those at the California Fair. The show of Jerseys, though, seemed fully equal in quality, and that of Holsteins was superior in quality of individual cows—at least as good as the California show was—and, curiously enough, the winners in Holsteins in both instances, it was said at the Salem Fair, were purchased by the owners from the same Eastern herd, that of Henry Stevens, Lacona, N. Y. The show of swine at Salem, though large, was also scarcely up to that at Sacramento in individual excellence—thanks to Sessions, Reed and McCaslin—and one might also add to most of the exhibitors at the latter place, though in extent and variety of the stock shown in general, as already noted, the Oregon show was considerably in the lead. Oregon is naturally a stock growing State, but in horticulture, though standing very high in several specialties, it does not come up to California, even on the latter's limited exhibit this year, in showy quality. There is, however, a State pride, good nature and growingness among the people, and an accuracy of newspaper reporting, in Oregon that make the most of whatever advantages the State has. Among the stock shown at the Oregon State Fair, aside from the more common breeds, were Red Polled, Polled Angus, Brown Swiss and Ayrshires in cattle; Lincoln, Leicestershire, Rambouillet, Spanish Merino and Shropshire Downs in sheep, and York-

(Continued on Page 206.)

Agricultural Review.

ALAMEDA.

LARGE HOP YARD—Livermore Herald: The Pleasanton Hop Co. has undertaken hop culture on a large scale. The yard is divided into five sections, each under charge of a foreman when the picking season begins, which is about Sept. 1st. These in turn are under the supervision of Superintendent George Davis, who has absolute charge of all the business of this great farm. There are about 1200 employees in the yard at this time, most of them engaged in picking. Experienced pickers, at the rate of a cent a pound, which is being paid this season, are enabled to make from \$2.50 to \$5 a day, and in many cases families make several hundred dollars during the season of three or four weeks. Many city people come to the yards every year, who pick only enough to pay their living expenses, regarding it merely as an outing, but most of the pickers are very much in earnest and work diligently. The crop this year is the largest in the history of the yard, and will require fully a month for the harvest.

THE ALMOND CROP.—The almond growers in the vicinity of Livermore will dispose of about fifty tons this season. The prices offered this year are very good, most of the growers contracting at 10¢@11¢ per pound. There has been considerable difficulty in getting sufficient help to gather the crop. Pickers are paid \$1.75 and \$2 per day. Nearly all the almonds are badly hidebound and the additional expense of hulling is entailed. Most of this work is done by hand, but there are two machines at work, one belonging to C. L. McCoy and the other to Louis Mel, which greatly facilitate the work. The varieties grown in this section include the I. X. L., Nonpareil, Ne Plus Ultra and Llewelling Seedling. The principal growers of Livermore valley are: The Arlington orchard, Julius Paul Smith, Bank of Livermore, William Regan, C. L. McCoy, Louis Mel and I. J. Righter.

COLUSA.

LARGE BRANCH OF PRUNES.—Sun: We have in the office a 9-inch branch with three short prongs, containing eighty-seven large prunes. The prongs are each attached to the limb, which is 1½ inch in circumference at point of attachment, the longest prong being the branch, measuring 9 inches, the other two 6 and 7 inches. They came from Dr. F. Z. Pirkey's trees and are but a fair sample of his orchard.

FRESNO.

BIG RAISIN YIELD.—Dinuba Advocate: C. D. Miller, who has been in the raisin business at Fresno for eight years, reports the raisin crop as being enormous and that there will be at least 3000 more carloads this season than has been shipped from Fresno before in any one year.

KINGS.

GREAT SCARCITY OF HELP.—Hanford Journal: Help is much needed over about Sanger to harvest the prune crop. Fred Kimble has the Fortuna orchard, 3 miles from that town, rented—209 acres of French prunes and 35 acres of Tragedies. The Indians from the hills, who usually are an important factor in harvesting the crop, are not to be had this year, for, owing to the appearance of smallpox among them, they have all been quarantined.

FRUITFUL LANDS—Lemoore Leader: E. W. Hampton exhibits a fine sample of onions. They were raised on his ranch, 2 miles west of Laton, and were planted the last week in March, being the first crop put in on the land, which he purchased on February 6th of the present year. Mr. Hampton informed us that he has selected five of these onions, which he will exhibit at the county fair, the aggregate weight of the five being eight pounds. Mr. Hampton had a very heavy crop and now has in store over 500 sacks of these fine onions.

LOS ANGELES.

MEETING OF WALNUT GROWERS—Anaheim Gazette: The Southern California Walnut Growers' Association, of which W. H. Spurgeon of Santa Ana is president, met Saturday in Los Angeles. The report of the secretary showed that the crop for southern California is about 150 cars bigger than it was last year, and that this year's nuts are of a superior quality. The total for the season will probably be about 850 carloads. Fixing the standard price occasioned some discussion, some of the walnut men wanting 11 cents for soft-shells and 10½ cents for hard-shells. It was finally settled, however, at 10 cents for the former variety and 9½ cents for the latter. The minor associations represented were: Los Nietos, Capistrano, Fullerton, Mountain View, Golden Belt, Anaheim, Saticoy, Santa

Paula, Santa Barbara, Oxnard and Santa Ana.

SAN DIEGO.

REMARKABLE GROWTH.—Imperial Press: The prolific productiveness of the soil of the Imperial valley is, perhaps, nowhere seen to better advantage than on Weed Bros. ranch, near Barnes, in the south end of the valley. Thirty-four days from the time the water was first turned on the land until the stalk was measured, sorghum had grown to a height of 6 feet 8 inches, a growth of almost 2½ inches per day. Millet on the same ranch grew 39 inches in twenty-seven days.

SAN JOAQUIN.

ONE ACRE OF GRAPES BROUGHT \$255.—Lodi Sentinel: M. C. Goodwin, who owns a vineyard just east of Lodi, has a record breaking acre. He got 255 crates from this one acre, which netted him \$255. He also obtained 500 crates from three other acres, which netted him \$500.

SAN LUIS OBISPO.

CALVES DYING—Tribune: The dairy-men about Cayucos are complaining much that early calves are dying in an unusually large number from causes which have not been discovered.

GOOD RECORD FOR A THRESHER.—The threshers have all gone under cover for the season, after very successful runs. The Cass machine was out forty-four days and threshed 28,863 sacks, with the remarkable record of having lost only three hours' time on account of accidents or breakdowns.

SANTA BARBARA.

GOOD BEAN CROPS—MUSTARD A FAILURE.—Reports from the northern part of Santa Barbara county indicate that the heaviest crop of beans on record will be harvested this year. A good many growers have taken up the vines, and in many cases threshing has begun. Lompoc is the only section in which a good harvest is not expected, and in this instance failure is due to the heavy winds of a few weeks ago, which drove the moisture in the ground to such an extent that the bean and mustard crops will, as before intimated, be almost a failure.

BEETS AND WALNUTS.—Sugar beet growers in Santa Barbara county, especially the northern portion, make a most favorable report, and it is likely that the sugar beet factory near Santa Maria will be kept going until November. It is also a fact that the walnut crop will be fair, the nuts being larger and of better quality, although of smaller quantity, than a year ago.

SANTA CLARA.

PRUNE DRYING.—San Jose Herald: At the Fruit Growers' Union, where fully 2000 tons of prunes will be dried, a three days' refusal to receive any fruit was necessitated last week by the fact that all available trays were full of prunes, spread in the field. Something like fifteen acres of ground is covered. Already the union has received over 1000 tons, having received and put through the two dippers as many as 117 tons in one day.

SANTA CRUZ.

NEWTOWN APPLES GOING TO EUROPE—Watsonville Pajaronian: Peter Mongol shipped a car of Newtowns last week and another one this week, destined for the English market. These are the earliest shipments of Newtowns ever made from here.

FRUIT PESTS—The September showing of codlin moth is heavy, and in orchards in which summer spraying has not been practiced and tree bands have been neglected the percentage of wormy apples is large. The codlin moth is a tireless worker and there is but one way to keep him from capturing an orchard and killing it—and that is to kill him. The work of the diatomite is in strong evidence in some packing houses. It has done more damage this season than it did last year, and the territory visited by this pest is much larger than it was last year.

SONOMA.

WINE GRAPES—Healdsburg Tribune: A curbstone meeting of wine men and vineyardists was held Saturday in Healdsburg to fix prices, but few if any sales were made. Wine men are offering \$22.50 and up for grapes, but the growers are generally holding for \$25, and a few sales are reported at that figure.

STANISLAUS.

LARGE FORCE ON PRUNES AND GRAPES.—Modesto Herald: One hundred and forty men are picking grapes and prunes on O. McHenry's Bald Eagle ranch. The prune crop, 160 acres, will yield about 110 tons of dried fruit, which is already under contract of sale to a Philadelphia firm. The grapes, 160 acres, largely Muscatels, will make about eighty tons of raisins. Last

year the crop of grapes was sold for wine purposes, but Mr. McHenry proposes to resume packing this fall.

SUTTER.

WINE GRAPE HARVEST.—Sutter County Farmer: The gathering and shipping of wine grapes has commenced in this section and will continue for some time. J. S. Hotchkiss has purchased most of the crops in this vicinity, including those of the Starr Bros. and C. Walters, for \$15 per ton, the variety being mostly Zinfandel. The Muscatels bring several dollars per ton less. The grapes will be shipped to Sacramento.

EGYPTIAN CORN.—Through the central portions of district 70, where the water overflowed the land last winter, there is a fine stand of Egyptian corn, all thrifty and in good condition. The yield will be large.

TEHAMA.

WOOL SALE STARTED.—Red Bluff News, Sept. 21: A small lot of wool was sold on Saturday, in all about sixty bales, belonging to owners of small bands of sheep. The prices paid were 10½ cents, 10½ cents and 11 cents per pound. Among the sellers were J. H. Benjamin, W. H. Stapp and Lawrence & Soares.

FINISHING UP ON FRUIT.—F. A. Weast finished packing green pears Friday night and Porter Bros. Co. finished here on same evening. This company finished up on the same fruit at Anderson on Thursday. This completes the green pear pack in this county this year. Peach drying is about at an end, and with two weeks more of dry weather the prune crop will have been pretty well gathered. The fruit men have been favored with very suitable weather lately and indications for an early rain have disappeared, for which they are no doubt thankful.

TULARE.

CITRUS FRUIT EXCHANGE.—Lindsay Gazette: The Tulare County Citrus Fruit Exchange held their annual meeting in Visalia Monday and elected the following directors: J. H. Williams, T. C. Douglas, W. R. Wood, A. J. Hutchinson, W. E. Sprott, D. G. Overall, A. M. Lumley and J. J. Cairns. The directors elected J. H. Williams president, D. G. Overall vice-president, W. E. Sprott secretary.

FINE MUSCATS.—Dinuba Advocate: The Muscat raisin crop will be almost a third more on the same vines here this year than last. E. L. Lewis brought in a sample this week and the berries are as fine as we have ever seen. Sixty berries weighed a pound. This does not sound very great, but they must be fine grapes to go only sixty to a pound.

GOOD PRICES FOR MULES.—J. H. Keeley sold twenty-six head of mules to a Mr. Evans of Kansas City, Missouri, who is in California buying them up for use in the Southern cotton fields, receiving \$1,725 for the lot. Five yearlings brought \$50 apiece, two \$40 apiece and the balance, which were of different ages, averaging \$73.50. Some of them sold for \$75 a head.

COYOTES DOING GREAT INJURY.—L. P. Denny, near Angiola, says that coyotes are worse than ever in that neighborhood and are doing great damage to live stock. Farmers are poisoning them—he killed over fifty himself last year that way—but the pests are increasing right along. Mr. Denny lost six calves, some two weeks old, this summer. He has twenty sows, but the coyotes have killed every pig they bore this summer, not one is left, and the coyotes also run to death and kill the old hogs. Walter Ayres lost 500 pigs last year, and Mr. Denny lost half that number.

YOLO.

BUY FINE CATTLE.—Mail: Yolo has another herd of prize cattle to add to her list of fine stock. They are all prize winners and have pedigrees that delight the hearts of cattlemen. They were purchased at the State Fair by Joe Craig and H. P. Eakle Jr. from the estate of Wm. H. Howard of the San Mateo rancho, and are a part of the famous Quinto herd. They are of the Shorthorn breed, and are bred for both milk and beef.

YUBA.

FARMERS ORGANIZE.—Marysville Appeal: Fear of another disastrous fire has caused the farmers and orchardists of the Pet Hill neighborhood to band themselves together for mutual protection. Henceforth hunting and camping in that section will be strictly forbidden, except upon permit, and according to the best information but very few permits will be granted. The fire which swept over 6000 acres of fine pasture land in that neighborhood last week was the straw that broke the camel's back. It not only destroyed pasturage, but all the fences in the area which it devastated. Though by extreme vigilance and united efforts no residences were destroyed, a number were at one time threatened.

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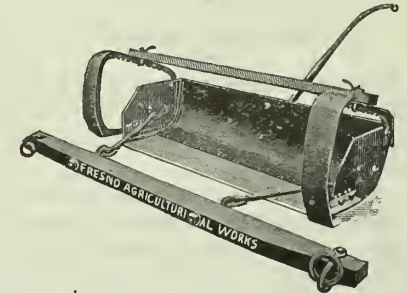
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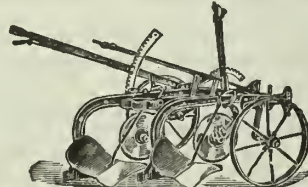
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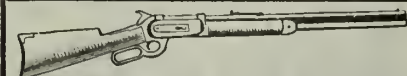
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THE HOME CIRCLE.

The Well's Secret.

I knew it all my boyhood; in a lonesome valley meadow,
Like a dryad's mirror hidden by the wood's dim arches near,
Its eye flashed back the sunshine, and grew dark and sad with shadow;
And I loved its truthful depths, where every pebble lay so clear.

I scooped my hand and drank it, and watched the sensate quiver
Of the dimpling rings of silver as the beads of crystal fell.
I pressed the richer grasses from its little trickling river,
Till at last I knew, as friends know, every secret of the well.

But one day I stood beside it on a sudden, unexpected,
When the sun had crossed the valley and a shadow hid the place,
And I looked in the dark water—saw my pallid cheek reflected—
And beside it, looking upward, saw an evil reptile face;

Looking upward, furtive, startled at the silent, swift intrusion;
Then it darted toward the grasses, and I saw not where it fled;
But I knew its eyes were on me, and the old-time sweet illusion
Of the pure and perfect symbol I had cherished there was dead.

And since then—oh, why the burden?—when joyous faces greet me,
With their eyes of limpid innocence, and words devoid of art,
I cannot trust their seeming, but must ask what eyes would meet me
Could I look in sudden silence at the secrets of the heart!

—John Boyle O'Reilly.

End of the Chapter.

Kenyon Meredith twisted round several times on his revolving chair, and, with an impatient movement of the hand, said:

"Ask Miss Gerard to come in here."

The frown left his face as a girl entered—a girl who was unknown to him save by name.

"I don't know why it is," she said, without preface, "but mother can know no peace till she has seen you. She knew your father, you know," with a queer, ironical smile. "How bored you must be with people who trade on that past acquaintance to make you do things you hate!"

"Not at all!" he hastened to assure her, letting his quick, appreciative eye roam from the soft curve of her up-lifted chin to her little patent-clad toes, that were tracing patterns on the carpet.

"Only, you see, I no longer practice—"

A triviality of that sort means nothing to mother," she averred.

And he laughed—a very attractive, pleasant laugh—and wondered why she roused in him interest; why he kept silence that he might hear her voice; why he felt compelled to seek her glance, that glance that wandered rather haughtily over his head. She ought not to attract him, he told himself, and yet she did. Her manner was very distant, her mouth grave, and if her eyes had a lurking smile, it was, he felt sure, an habitual one, born of gay, good humor—of sweet temper.

"Mother has made up her mind to see you," she continued, "and the fact that you no longer visit or receive patients only makes her more determined. Will you go to her? She sent me, instead of writing you a note."

Meredith inwardly complimented Mrs. Gerard upon her choice of a messenger. Aloud, he merely said:

"It will give me great pleasure," and arose as she did, furtively marking the mixture of question and incredulity in her straight, raised eyebrows.

She thanked him gravely, indifferently, was evidently quite unconscious of the warm pressure of his handclasp, and, with a slight bow, left him.

And that is how they first met.

Yesterday she was but a name to him; he was hardly aware of her existence. To-day—in ten minutes—the

world, in some inexplicable way, way, had changed for him. The dull, blue glasses through which he was accustomed to look upon it were snatched from his eyes, snatched by a soft, tender hand, that replaced them, all unconsciously, with those which were rose-hued.

With a slight laugh, he pushed aside the papers on his desk, and fell to pacing the room restlessly. Once he stopped before a mirror, studying in it his reflection. He was neither young nor good-looking; but his face was kind, open and full of character. It bore traces of some suffering, too, and the lines about his clean-shaven mouth gave evidence of great determination, that matched a certain expression sometimes to be seen in his eyes.

And when he had spent more than an hour in thought, he put on his hat, and paid his promised visit to Mrs. Gerard, with promptitude which she considered very flattering.

* * * * *

"Mother is not really ill."

There was no question in the girl's tone. She was standing before Meredith, her eyes fixed searchingly on his; and they were both occupying the half-yard of Mrs. Gerard's balcony which was not covered with flower boxes.

"No, not really," he replied, unguardedly, watching the little soft rings of hair as they were lifted from her forehead by the light night wind.

"Then why have you come here every day for five weeks?"

It was a question he was not prepared to answer offhand, and so took refuge in temporary silence.

"It pleases her," he said, at last. "She—she—has confidence in me; and—it enables me to see you, too—sometimes."

"Sometimes?" she queried, and smiled—one of her rare, sweet smiles—full in his eyes. He thrust his hands into his pockets, overcoming a desire to draw her into his arm. And his voice sounded cold when he spoke again, because of the restraint he was putting on himself.

"Your life cannot be a happy one, shut up in this great house, in everlasting attendance upon—"

"No, it is not happy; but that cannot be helped."

"I differ with you. It can—it should. If—you will let it be so—it shall!"

"Hark! That is mother calling. You are very good. Good-night!"

She gave him both her hands with the utmost frankness, smiled again into his face, as a fearless child might, not as a woman would, and left him, piqued, baffled, with half angry eyes, frowning down upon an innocent geranium.

"I might be her father!" he reflected, walking slowly home. "She is more than lovely, but she is an icicle. She has no idea the meaning of love; but she shall learn, and I will teach her. She is a statue now, but she shall come to life beneath my influences, my touch!"

Even as he made this half-fierce resolution some memory came to him that drove the color from his face. With an impatient gesture he turned into his own house, determinedly thrusting aside any disturbing thoughts.

* * * * *

"You are not unhappy now?"

As Meredith asked the question he shipped his sculls, bent a little forward and tried to get the better of the gathering gloom and the great brim of her hat in an endeavor to meet her eyes.

The river was thronged; there was an incessant busy hum of voices; now and then some pleasure seekers, whose only idea of enjoyment was to make a great noise, cleft the air with shouts and songs. But Marion Gerard and her companion were deaf and blind to all about them.

She did not answer—she was a woman of so few words—only her mouth and eyes smiled together. And she let him take one of her hands and pull off the loose glove, and rest his lips on a vein that crossed in a blue V at her wrist, and then lingering on each separate finger. Her eyes dwelt fondly on his dark, bent head, and a thrill of

passionate tenderness swept over her, but she gave no sign. And when they had landed, and he was walking by her side between two great hedges of syringa, he said again, half impatiently:

"You are not unhappy now?"

"Why ask—when you know?"

"Because I like you to tell me; because I can't read your thoughts through the back of a straw hat; because you say so little that every word is valuable. You are as cold as ice—you sleep—you dream! Will you never wake to life—to warmth—to tenderness—for me?"

The words left his lips rather rapidly, in unconsidered impulse, while a wave of joyous exultation passed over him at the mute, unexpected characteristic answer—two soft, warm arms wound around his neck, two shy, sweet lips held gladly, willingly up to his.

"You are awake at last?" he said, hardly above his breath, and crushed his mouth on hers in passionate thirst.

That night, when Meredith had gone, and Marion Gerard stood smiling down upon the restless river, a woman swept her skirts with a little decisive rustle over the trim lawn and laid a gentle hand on the girl's arm.

"You are a mere child," she said, without warning, "with your old-world notions, and your unfashionable ideas of life in general, and your mother is an idiot—always was! That is why I, for your own good, mean to speak. I am your aunt, anyhow, and—"

"What have I done?" the girl questioned, in surprise.

"Not much—yet. It's what you may do. I haven't the remotest idea how Kenyon Meredith took up the part of 'tame cat' about your house, only I may as well tell you, before matters go any further, that his wife is alive. They have been separated for twenty years, but—she lives. Marion, I'm telling you—"

"For my good," the other interrupted, then paused, while her lips grew white and her eyes wide and troubled. "Don't you know people hate being told things for their good?" and turned away; blindly, gropingly, with a little despairing gesture that forbade further speech on her aunt's part.

* * * * *

"Is it true?"

The simple words left the girl's lips in a sort of panting whisper, next day, as she stood on the opposite side of his library table, facing Meredith.

"My dear child, I thought you were above listening to the petty gossip of—"

"Is it true?"

He came to her side, and held her forcibly to him before he answered.

"Yes, but—"

"Let me go—"

"Not till you have heard me."

So she made no further struggle to escape his hold, but leaned wearily against his arm while he spoke.

His voice was very low and persuasive. His explanation might have been convincing to other ears, but she was shutting out from hers the insidious, pleading tones, striving all her might to steel herself against him. And when he was silent she unlaced his fingers determinedly from about her wrists, and went a little distance from him.

"I don't believe you have been listening—that you have heard a word," he declared, discontentedly, following her.

"I have tried not. My only safeguard lies in being deaf to every sound of your voice. Ah!" turning suddenly toward him, and fixing her dry, miserable eyes on his, "what made you do it?" Why could you not have left me in peace—in—"

"Not happiness," he said, swiftly, across her words.

"Not? You are remembering that I was foolish enough to resent a little dull monotony. What is that compared to the weariness of all the empty years to come? Were there no other women—women whose hearts have passed through so many storms that they have lost the power of feeling keenly—upon whom you could

practice your sophistries? Were there not—"

"It was because you were so unlike all other women I had ever known that I was first attracted to you. It was because in your half-haughty indifference you appeared to me so alluringly unassailable that the desire grew within me to be he who would pierce the armor of your chilly reserve till it lay broken and useless at your feet. It was because I knew your heart to be untouched by passion that I longed to stir within it thoughts of love. It was because you were so sweet, so true, so pure, so innocent, that—"

"For your sport you have laid waste my whole life."

The words, gently spoken, shamed him as no bitter reproach could have done.

"At first," he admitted, the slow color rising to and then receding from his face, "in wanton carelessness I played a game so familiar to me, only on different lines. And then it became earnest; so desperately, painfully earnest! I ought to have drawn back, but I could not! It is so seldom a man resists his inclinations! And then I forgot everything; at least I shut out remembrance. For the first time I grew ashamed of my past, and dreamed of a future, at your side, when I should be raised by the influence of your pure love to your level—ah! not" as she shook her head sadly—"in the world's eyes, perhaps, because it never can or will understand; but in yours, in mine, away, apart from every one!"

He went on vehemently, noting the growing pallor of her cheeks.

"I deserve every reproach from you. I—"

"But that is the worst of it," she interrupted, coming near to him and resting her cold hands half absently on his breast. "I cannot reproach you—I don't want to. Don't you see that it is an awful battle between my love for you and my determination to put you out of my life altogether? And I am so fearful lest it should be a one-sided fight—lest the victory should lie with the one it should not. Can't you understand? I have no heart, no mind that is not dominated by you. There is only just the certainty that in that future of which you speak, you, forgetting that you had dragged me down, would learn to despise me, too! That alone goads my spirit to right doing. To all else I am blinded by my love—that love which makes all you say and do seem good in my eyes."

"I was so proud to be no longer myself, but only yours; now I know I must be forever—no one's! And I may live," her voice rising to a little unconscious wail, "fifty more years!"

He pressed her face down on his heart, that he might not see the agony in her eyes.

"What then, do you mean to do?" he asked.

"To—leave you now—at once. Don't," with a little laugh that had a sob in it, "tempt me to stay!"

There was something in her voice which told him argument would be useless, and with a hopeless sigh he let his arms fall to his sides, and left her free.

There was a dead silence, save for the ticking of the clock, which sounded unusually loud. He felt, rather than saw, that she had reached the door. It opened, then closed—and still she was not gone. She was coming toward him. She had not strength to go after all, he thought, while a wild, delirious joy, that sent the blood rushing to his head and robbed him of sight and hearing, took possession of him.

"You have come back?" he said, breathlessly, and held out to her both of his hands.

"Dear," she answered, gravely, "don't make—another woman—suffer as—"

The rest of the sentence died away in a whisper. Through the blind tangle of his mind, the booming in his ears, there came the slow, departing rustle of her gown, the click of the latch, the soft closing of the door.

His face contracted painfully, and then fell forward on his arms, flung down in bitter, hopeless despair upon the window sill.—Free Lance.

How to Save Life.

The following simplified method for the restoration of drowning persons, and of those whose have lost consciousness through asphyxia or any other cause, was developed by Dr. J. V. Laborde, of the School of Anthropology in Paris. It has proved efficacious in many cases. In one cited, of a child who had been submerged for nearly fifteen minutes, the return of breathing was accomplished in ten minutes. The translation here given is from a leaflet which Dr. Laborde distributes among his pupils, and its publication is believed to be timely:

1. As soon as the drowning man has been taken from the water, force open his mouth. If the teeth are clenched, separate them with the fingers, or by means of any hard object—e. g., a piece of wood, the end of a cane, the handle of a knife, or a fork.

2. Firmly seize between the thumb and the first finger of the right hand the end of the tongue, using your handkerchief, or any piece of linen, to prevent the tongue from slipping; then repeatedly, rhythmically, and with decision, pull it from the mouth, and relax it alternately—at the rate of least twenty times a minute, imitating the cadenced movement of expiration and inspiration.

3. At the same time introduce, far back into the throat, the first finger of the left hand, pressing upon the base of the tongue, so as to induce vomiting, and thus free the stomach of the water or food which encumbers it.

4. This treatment, the most efficacious known method of bringing back the respiration, must be begun without the slightest delay, and persistently continued for a half-hour, an hour, or more. At the same time all the usual remedies must be applied. Most important are the removal of the clothes, friction over the whole body, pressure upon the interior part of the chest, the restoration of the bodily heat, and, where it is possible, the application upon the region of the heart of compresses of very hot water.

The same method may and should be applied, in the same manner, in all cases of asphyxia and of syncope (loss of consciousness), from whatever cause.

Use of Water at Meals.

Dr. Felix L. Oswald insists that the avoidance of water at meals is a mere "sanitary superstition." It is not possible for any normally constituted human being to eat his way to the first quarter installment of a modern dinner of overheated made dishes and greasy viands without experiencing a distinct longing for a cooling diluent, and before the end of the second course that craving assumes the urgency of positive distress, but the sufferer is warned to forebear. Has not Prof. Orthodox enumerated five distinct sources of peril from indulging that appetency, and proved that the water instinct is wrong, and that nature knows nothing about it?

The most specious of these arguments is the alleged risk that the introduction of cold water would coagulate the albumen of the ingesta, and thus complicate the labors of the digestive organs. But is it not evident that those organs should be allowed a casting vote in the decision of that controversy?

Dr. Schrödt, the author of "Natur-Heilkunde," holds, on the contrary, that our diet is not half fluid enough, and demonstrates that organic warmth will soon reduce over-cold beverages to the right medium, and that a craving which nothing but fresh water will satisfy is a clear proof that the stomach is suffering from an excess of caloric and a deficiency of moisture.

Just wait, and that distress will subside, insists Prof. O—x. Yes; the subtle chemistry of the organism will eventually find means to satisfy its needs from internal sources, just as the agony of a famished man will give way to a dull torpor; the system has made another forced loan on the reserve stores of its own tissues, and made the sufferer a little more comfortable,

though also a little leaner. Even thus the disappointed stomach will make shift to lead moisture from some other part of the organism where it is less sorely needed and the distress subsides, though a feeling of vague discomfort remains, suggesting that the sort of moisture reabsorbed from the lower alimentary duct is not exactly what the stomach wanted.

The Giant Cactus.

The Giant Cereus of Arizona and northern Mexico, says Country Life in America, is the largest-growing member of the cactus family, attaining a height of 60 feet and a diameter of 2 feet or more. In the United States it is usually known simply as the "Giant cactus." In Mexico they call it the "Saguaro" (the "g" has the sound of "w"). In proportion to their size the Giant cacti are among the heaviest plants known, the body being largely composed of water. So full are they that travelers nearly perishing of thirst have saved themselves by cutting out a large piece and shaping the bottom of the wound to catch the water or sap, which collects in a considerable quantity in an incredible short time. One would scarcely seek to quench his thirst in the manner except in cases of dire necessity for the sap is not of a pleasant taste.

The flowers, usually white though sometimes tinged with smoky blue, are borne in a circle of clusters near the top of the plant, giving the effect of its being crowned with a wreath of white blossoms. These blossoms are followed by dull red, edible fruits, quite like a fig or pear in shape. The native Indians make it a point to gather all these fruits for food and in addition manufacture from them an intoxicating beverage. To obtain these fruits the Indians push them off one at a time, using a long pole, which is sometimes obtained from a dead trunk of one of these giants, for when dry the body splits up into thin strips the extreme length of the plant. The flower of the Giant cactus has been adopted by Arizona as the territorial flower, but the sensational newspaper articles about the danger of its extinction are greatly overdrawn.

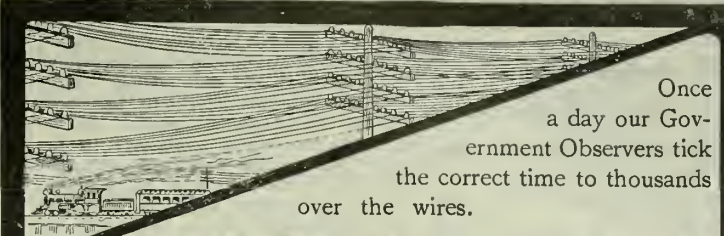
Is Fasting Beneficial?

We are living in an age of fads, remarks Good Health, and as its opinion has been solicited in regard to the "fasting fad," it proceeds to give it as follows:

"There is no particular advantage to be gained from going hungry. Hunger is the voice of nature telling us that the system needs food, and, like all of nature's warnings, should be heeded. To be sure, a great many, we might say the majority of people, eat too much, as well as too often; but the entire abstinence from food is an exceptional remedy, if it is used at all. In cases where one's stomach is filled with germs it is far better to fast than to go on eating in the usual way; but even then it is not necessary, for one can get all the benefits of fasting and more, without the discomfort, by subsisting, for a time, upon a fruit diet. In this way the germs are starved out, the fruit juice acting as a disinfectant. Usually one or two days of this kind of fasting is all that is needed, and it is not always necessary to use the fruit entirely alone even then. Some dry sterilized bread, such as zwieback or granose, may be taken with it without interfering with the purpose of the fast. It is really wonderful what can be accomplished by the use of fruit in ridding the digestive tract of germs."

Apples for Sleeplessness.

The apple is such a common fruit that very few persons are familiar with its remarkably efficacious medicinal properties. Everybody ought to know that the very best thing they can do is to eat apples just before retiring for the night. Persons uninitiated in the mysteries of the fruit are liable to throw up their hands in horror at the visions of dyspepsia which such a suggestion



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summon up, but no harm can come even to a delicate system by the eating of ripe and juicy apples before going to bed. The apple is excellent brain food, because it has more phosphoric acid in easily digested shape than any other fruits. It excites the action of the liver, promotes sound and healthy sleep, and thoroughly disinfects the mouth. This is not all; the apple prevents indigestion and throat diseases.—Popular Science News.

Charcoal as a Purifier.

Housekeepers do not use charcoal enough about their kitchens. A few pieces of charcoal laid in the refrigerator absorb impurities in the air. A bag of powdered charcoal tied around the mouth of the faucet removes impurities in the water as it passes through it. Charcoal used in this way soon becomes foul, and should be frequently replaced by a fresh supply. It is best to burn up charcoal that has been used as a germ trap.

DOMESTIC ECONOMY.

Domestic Hints.

OYSTER PLANT.—Scrape one oyster plant, cut into small lengths, and throw into cold water at once to keep from turning dark. Cook in boiling salted water one hour. Serve with a cream sauce.

HAMBURG STEAK.—Two pounds of the round of beef chopped very fine; press it into a flat steak, sprinkle with salt and pepper and a little onion juice; flour it lightly and broil the same as beefsteak. Make a brown gravy with a little soup stock; thicken with flour.

SCALLOPED APPLES.—Six large tart apples, two cups stale breadcrumbs, two tablespoonfuls molasses, one-half cup hot water. Pare the apples and cut in generous slices. Into a buttered baking dish put a layer of breadcrumbs, then a layer of the sliced apples and a top layer of crumbs. Add the hot water to the molasses and pour it over the pudding. Bake for twenty minutes.

SALT CODFISH IN EGG CUPS.—Let salt codfish picked in bits (not shredded) stand over night or some hours in cold water, then drain and wring out all the water. To each quarter of a cup of fish, add one-half a cup of cream or thin white sauce, and a beaten egg. Turn into a buttered cup, egg stirrer or poacher, and cook standing in hot water until nearly firm. The water should not boil. Serve in the cup or turn out as desired.

SALMON LOAF.—Two cups salmon, one cup stale breadcrumbs, one teaspoonful onion juice, salt and pepper, one teaspoonful chopped parsley, three eggs. Flake the salmon fine, mix with the breadcrumbs and seasoning and moisten with the well-beaten eggs. Pack into a buttered mold and steam for two hours. Serve hot. Any left-over of this dish may be broken into small pieces, and, served with mayonnaise, it makes a palatable salad.

CORN PUDDING.—Four large ears of corn grated, or a can of corn pre-

pared as for corn cakes, one heaping tablespoonful of butter, one teaspoonful of flour, one teaspoonful of sugar, one whole egg and one yolk. Melt the butter and stir into the corn, beat the eggs and add with one pint of milk, the sugar and flour, and salt and pepper to taste. Bake in a shallow dish in a moderate oven from twenty minutes to half an hour. If it bakes too long it becomes watery.

Hints to Housekeepers.

It is a good plan, these hot, humid days, to keep a box of lime in the kitchen pantry as a purifier.

If a recipe calls for a cup of left-over gravy, and there is not such a thing in the refrigerator, make a substitute by stirring into a cup of boiling water a teaspoonful of beef extract.

For an omelet with onion, mushrooms or asparagus water is better than milk. To make an onion omelet, chop fine tiny onions or leeks and mix them with six well-beaten eggs, four tablespoonfuls of water, and pepper and salt. Mushroom or asparagus omelet may be made in the same way, or the vegetables may be first cooked and sprinkled over the omelet just before it is folded.

Sweet potatoes are better warmed up than freshly cooked. They may be put through the potato ricer and converted into croquettes, or a pudding or pie. They may be glazed with sugar and butter, warmed in cream or make an excellent soufflé. Another way is to cut them in thick slices, dip in flour, eggs and crumbs, and fry in deep fat, or slice them into a regular fritter batter and fry.

Sour potatoes is a variation of potato salad that is often served in Germany. Boil four good-sized potatoes. When done and cold, skin and cut into cubes. Place these in a bowl and add salt and pepper to taste. Now mix in another bowl half a pint of sweet oil and four tablespoonfuls of sweet cider vinegar, one good-sized onion grated fine, and sprigs of parsley finely chopped. Mix these together well and pour over the potatoes. Now place the empty bowl on top of the full one, and shake up and down until well mixed. Garnish the dish with lemon slices, cut in halves.

To make clarified chicken consomme, put into a soup pot eight quarts of white chicken broth, add two pounds of knuckle of veal, one pound of chicken legs and pinions, then boil, skim and put in four pounds of roasted, unbrowned chicken, two minced leeks, one medium-sized minced carrot, one onion struck with one clove, a little parsley and celery roots. Boil continually for four hours. Chop up very fine two pounds of veal, mix in with it two whole eggs, dilute with one quart of cold broth, and stir this into the consomme, using a whip, adding two broken-up chicken carcasses. Boil on a slow fire for one hour, salt it according to taste, and strain it through a silk sieve.

"What makes the baby cry?" asked the little visitor.

"Oh!" exclaimed Ethel, "our baby doesn't have to have anything to make it cry."

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Sept. 24, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	69 1/4 @ 68 3/4	70 3/4 @ 70 1/2
Thursday.....	69 1/4 @ 68 3/4	70 3/4 @ 70
Friday.....	68 3/4 @ 69 1/4	69 3/4 @ 70 1/2
Saturday.....	69 1/4 @ 69	70 3/4 @ 70 1/2
Monday.....	69 1/4 @ 70 1/2	70 3/4 @ 71 1/4
Tuesday.....	70 3/4 @ 69 3/4	71 1/4 @ 70 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	31 1/4 @ 31	31 1/4 @ 31 1/4
Thursday.....	31 1/4 @ 30 3/4	31 1/4 @ 31 1/4
Friday.....	31 1/4 @ 30 3/4	31 1/4 @ 31 1/4
Saturday.....	30 3/4 @ 30 3/4	31 1/4 @ 31 1/4
Monday.....	30 3/4 @ 30 3/4	31 1/4 @ 31 1/4
Tuesday.....	30 3/4 @ 30 3/4	31 1/4 @ 31 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903
Thursday.....	1 17 1/2 @ 1 17	1 19 1/4 @ 1 19 1/4
Friday.....	1 17 1/2 @ 1 18	1 20 1/4 @ 1 19 1/4
Saturday.....	1 19 @ 1 19 1/4	1 21 1/4 @ 1 21 1/4
Monday.....	1 20 1/4 @ 1 19 1/4	1 22 1/4 @ 1 22 1/4
Tuesday.....	1 19 @ 1 19 1/4	1 21 1/4 @ 1 21 1/4
Wednesday.....	1 19 @ 1 19 1/4	1 21 1/4 @ 1 21 1/4

WHEAT.

The market for this cereal has shown decided firmness most of the time since date of last report in these columns. The strength was more pronounced in the speculative prices for future deliveries than in values obtainable in the open market for immediate offerings of wheat, but the payment of materially better figures than had been ruling was necessary to secure noteworthy spot deliveries of wheat, either at Port Costa or in this center. The improvement was largely in sympathy with Chicago, where the upward movement was based mainly on unfavorable climatic conditions in the Eastern wheat belt. The English market was not steady in following suit, but the payment of better prices for wheat here was made possible by the weakness of freights, latest charters being down to 21s. 3d. per ton for the usual European voyage. Although ocean freight rates have been lower, they are getting down to a point where there is little profit to ships. Even the heavily subsidized French vessels, which are largely the cause of the present depression in the freight market, are beginning to look elsewhere for business. Some wheat is going from here to Australia and South America, and this has also aided to some extent in stiffening the local market. It is reported that the drouth in Australia has been broken, but as she is now just emerging from the Winter season, it will be several months before she will get relief from home supplies.

California Milling..... 1 20 @ 1 25
Cal. No. 1 shipping, alongside..... 1 17 1/4 @ 1 18 1/4
Oregon Valley..... @
Washington Blue Stem..... @
Washington Club..... @
Of qualities wheat..... 1 15 @ 1 17 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	55 1/2 @ 55 1/4	65 1/2 @ 65 1/4
Freight rates.....	36 1/4 @ 37 1/4	21 1/4 @ 22 1/4
Local market.....	95 @ 98 1/2	1 17 1/4 @ 1 20

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.17@1.19 1/2.
May, 1903, delivery, \$1.19 1/2@1.22 1/4.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.19@1.19 1/2; May, 1903, \$1.21 1/2 bid, \$1.21 1/2 asked.

FLOUR.

Immediately following the issue of our last market review, the local flour combine announced an advance in official card rates of 25c per barrel. No business of consequence, however, has been affected at the advanced figures. As is generally the case when a change in flour quotations is made upward, every broker on the street sees to it that his clients are all stocked up at old prices. Handlers of the product of outside mills are not quoting materially higher. Should there another advance soon follow, present nominal quotations of the local combine will go into effect.

Superfine, lower grades.....	2 40 @ 2 65
Superfine, good to choice.....	2 75 @ 3 00
Country grades, extras.....	3 40 @ 3 60
Choice and extra choice.....	3 60 @ 3 80
Fancy brands, jobbing.....	3 80 @ 4 00
Oregon, Bakers' extra.....	3 90 @ 3 30
Washington, Bakers' extra.....	3 00 @ 3 50

BARLEY.

This cereal is taking the lead the current season in the matter of developing strength, as also in the outward movement. But the barley exports a year ago were also ahead of wheat, although barley was then going at much lower figures than this season, feed a year ago being quotable at 70@75c, and 85c being a quotable extreme on brewing barley other than Chevalier. For the latter \$1.05 was about the utmost warranted as a quotation at corresponding date last year, as against the quotable extreme of \$1.50 today. While barley is bringing good prices in comparison with those recently current, the figures yet established or likely to be established this season are by no means phenomenal. In the past twenty years prices for barley have been at times so far above any values realized this Fall as to make current figures look decidedly low in comparison.

Feed, No. 1 to choice.....	1 10 @ 1 1 1/4
Feed, fair to good.....	1 07 1/4 @ 1 10
Brewing, No. 1 to choice new.....	1 12 1/4 @ 1 15
Chevalier, No. 1 to choice.....	1 35 @ 1 50
Chevalier, common to fair.....	1 15 @ 1 30

OATS.

The market is showing more firmness, partly due to the Government endeavoring to buy in the Northern section, but mainly in consequence of the recent sharp advances in barley values, making oats decidedly the cheaper feed cereal. Inquiry has been most pronounced for choice to select stock, and more particularly for lots desirable for seed, market for latter sort ruling quite firm.

White Oats, fancy feed.....	1 20 @ 1 22 1/4
White, good to choice.....	1 12 1/4 @ 1 17 1/4
White, poor to fair.....	1 07 1/4 @ 1 10
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 17 1/4 @ 1 22 1/4
Surprise, good to choice.....	1 20 @ 1 25
Black Russian.....	95 @ 1 20
Red.....	97 1/4 @ 1 17 1/4

CORN.

Much the same conditions prevail in the corn market as previously noted. Spot stocks are principally Large Yellow, and of this description are not heavy enough to admit of any noteworthy wholesale operations. At full current values, dealers and consumers are not inclined to purchase very freely.

Large White, good to choice.....	@
Large Yellow.....	1 42 1/4 @ 1 45
Small Yellow.....	1 45 @ 1 47 1/4

RYE.

Not much arriving or offering at present, and in recent asking prices there has been a marked advance.

Good to choice.....	1 00 @ 1 02 1/4
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BUCKWHEAT.

No evidences of anything doing in this cereal. In the absence of both sellers and buyers, values are poorly defined.

Good to choice.....	1 55 @ 1 70
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BEANS.

Business in new crop beans has been mainly in Large Whites or Lady Washingtons, these constituting the bulk of new offerings up to date. Owing to a very fair shipping demand, the tendency has been to more firmness than at the opening of the season. New Black-eyes are not in heavy spot stock, but are moving rather slowly at the quoted decline. Business in other beans is at generally unchanged figures, but in most kinds is necessarily light, owing to limited spot supplies.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 25 @ 2 35
Pinks.....	2 05 @ 2 15
Bayos, good to choice.....	2 55 @ 2 75
Reds.....	2 25 @ 2 40
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 80 @ 3 85
Black-eye Beans.....	3 75 @ 3 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

There are moderate quantities of new crop offering, both from southern section

and Humboldt. Inquiry which exists is mainly for Niles and these sell to best advantage, most of the millers and dealers being still well stocked with Green from last crop.

Green Peas, California.....	1 40 @ 1 50
Niles Peas.....	1 75 @

WOOL.

The local market is firm, but is not displaying much life, offerings here at present being too light to admit of any extensive business in the way of transfers from first hands. Not only are spot offerings of grease wools light, but they are mostly of heavy or otherwise undesirable fleeces. Firmness is as fully pronounced, both here and abroad, as previously noted. Wools are not coming forward freely, and those being received represent in the main prior arrival purchases.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

While receipts of new crop are on the increase, they represent mainly deliveries on contracts. The yield in this State is not aggregating in all sections as much as anticipated, but the crop as a whole is of good average, both as to quantity and quality. Including the liberal yield in Oregon and Washington, the crop of the coast will probably aggregate 175,000 bales. In the absence of spot business values are not well defined, but the market may be said to be quotable nominally at 20@24c. for good to choice 1902 stock. A New York review gives the following: "Picking in New York State is finished, but not all of the hops have been haled. A few seedlings are here and they sell at about 30@32c. Growers are asking 30c. in the interior for the main crop, and dealers are not disposed to buy until they get more encouragement from brewers. Stocks of 1901 hops are so small that full late prices are asked for all grades, but there is no business passing to speak of. Some further transactions in old olds and the figures realized are surprisingly good considering the quality. From present indications the State crop will be about 25,000 bales, possibly a little more. Some of the late cables from London say: 'Our crop will be 350,000 cwt. Weather unfavorable.' Reports from Germany are slightly firmer, possibly the result of free buying by English dealers."

HAY AND STRAW.

The last quoted advance on hay is being fairly well maintained, with offerings aggregating more moderate proportions than prior to the marking up of prices. Spot stocks are mostly out of first hands, and in the hay sections contiguous to the San Francisco market there is little hay remaining under control of producers. No marked changes are looked for in the near future, and especially not to easier figures.

Wheat, good to choice.....	10 50 @ 13 00
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 10 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 00
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 00
Straw, 3/4 bale.....	37 1/2 @ 45

MILLSTUFFS.

Bran and Middlings remained in light supply, with prices for same at fully as high a range as previously quoted. Rolled Barley is again higher, and market decidedly stiff. Milled Corn ruled steady.

Bran, 3/4 ton.....	20 00 @ 21 00
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 00 @ 22 50
Barley, Rolled.....	23 00 @ 24 50
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Not much Mustard Seed arriving. The crop is light and the bulk of it will likely go East from producing point. Market for Flaxseed is quotably unchanged. Canary Seed is scarce and high. Other bird seed is in fair supply.

	Per ctl.
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 10 @ 3 50
	Per lb.
Canary.....	4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/2 @ 4

BAGS AND BAGGING.

Trade in this department is of slim pro-

portions, as is to be expected at this time of year. In Grain Bags there is practically nothing doing. Quotable values throughout remain nominally as last stated.

Calcutta Grain Bags, buyer June-July.....	@
Calcutta Grain Bags, spot.....	5 1/2 @ 6
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 6
San Quentin Bags, 100.....	5 55 @
Wool Sacks, 4 lbs.....	3 @ 36
Wool Sacks, 3 1/2 lbs.....	22 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/4 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

There is no lack of inquiry for Hides, both Wet and Salted, and current values for the same are being well maintained. Pelts are not in very active demand, but business doing is at quotably unchanged values. Tallow sells readily at full current figures.

HONEY.

Market is firm, in consequence of very limited spot supplies. Demand which exists is mainly on local account, and most urgent inquiry is for water white. In a small way or for very superior qualities higher prices are obtainable than are quoted.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	12 @ 13
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/4

BEESWAX.

Not much offering, nor is the market likely to be burdened with supplies for some time.

Good to choice, light, 3/4 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is commanding about same figures as last quoted, with market moderately firm in tone. Market for Mutton is steady, with demand fair and supplies not particularly heavy. Lamb in prime to choice condition is in good request at full current figures. Veal is quotably unchanged, but market cannot be termed firm, as calves are arriving rather freely. Hog market remains firm for medium sizes. Large also sell to fair advantage. Small Hogs are coming forward most too rapidly for the demand for this description.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3/4 lb.....	7 @
Beef, second quality.....	6 1/2 @
Beef, third quality.....	6 @
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 3/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/2 @ 6 3/4
Hogs, soft or acorn fed.....	@
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 3/4 lb.....	8 @ 9 1/4
Veal, large, 3/4 lb.....	7 @ 8 1/4
Lamb, spring, 3/4 lb.....	9 @ 9 1/4

POULTRY.

There has been a tolerably fair market for poultry in prime to choice condition, the quotable range of prices for most kinds remaining practically the same as noted in last review. About the only noteworthy change was a quotable decline of 1 cent per pound in values for Old Turkeys, Young dropping to nearly the same figures as Old. Some buyers are giving Old the preference at about same price. Chickens received the most attention. Choice old and small young in fine condition met with the firmest market.

Turkeys, dressed, choice.....	@
Turkeys, alive, choice young.....	16 @ 17
Turkeys, alive, Hens, 3/4 lb.....	15 @ 16
Turkeys, alive, Gobblers, 3/4 lb.....	15 @ 16
Hens, California, 3/4 dozen.....	4 60 @ 5 00
Roosters, old.....	5 00 @ 5 50
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	3 50 @ 4 00

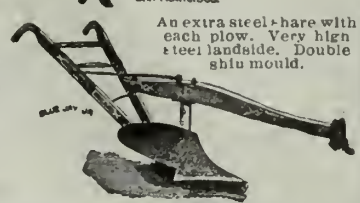
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Broilers, large.....	3 50	@ 4 00
Broilers, small to medium.....	3 00	@ 3 50
Ducks, old, # dozen.....	2 50	@ 3 00
Ducks, young, # dozen.....	2 50	@ 5 50
Geese, # pair.....	1 25	@ 1 50
Goslings, # pair.....	1 25	@ 1 50
Pigeons, old, # dozen.....	1 00	@ 1 25
Pigeons, young.....	1 50	@ 1 75

BUTTER.

While favorite brands of creameries are quoted at a high range, and in a small way bring extreme locations or a little more, the market is not firm. Close cash buyers are obtaining concessions, even on fancy marks, which would not have been granted them a week ago. Cold storage butter is receiving the bulk of attention and is being crowded to sale to the detriment of the market for most of the fresh butter, other than strictly fancy, which is now coming forward.

Creamery, extras, # lb.....	30	@ 32
Creamery, firsts.....	27 1/4	@ 29
Dairy, select.....	27 1/4	@ —
Dairy, firsts.....	25	@ 26
Dairy seconds.....	21	@ 23
Firkin, good to choice.....	20	@ 23
Mixed store.....	18	@ 20
Pickled Roll.....	22	@ 24

CHEESE.

Domestic product is in fair supply, especially of other than high-grade mild flavored new. Values are without quotable change, but buyers are not taking hold very freely at full current figures. Eastern market is firm and advancing, being now quoted at 11@11 1/2c. at New York.

California, fancy flat, new.....	11 1/4	@ 12
California, good to choice.....	10 1/2	@ 11
California, fair to good.....	—	@ —
California, "Young Americas".....	11 1/4	@ 13

EGGS.

Choice to select fresh are in very light supply and are commanding stiff figures. That the market for best eggs will incline materially in favor of buyers during the next two months is not probable. Of other than fancy fresh, however, there is no scarcity. Cold storage and Eastern eggs are being offered freely and at easy figures. Choice fresh from Iowa have been obtainable within the past few days at 25c. per dozen here by the carload.

California, select, large, white and fresh.....	39	@ 40
California, select, irregular color & size.....	32 1/4	@ 38
California, good to choice store.....	24	@ 28

VEGETABLES.

It was the exception where offerings were heavy of any description, especially of desirable qualities, and such changes as were made in quotations were in most instances to slightly firmer figures than had been ruling. Corn was in greatly reduced supply, and quotations for same were largely nominal. Tomatoes sold at an advance, both to the trade and to canners. Onions were in lighter request than for a week or two preceding, and market, in consequence, was less favorable to sellers.

Beans, Lima, # lb.....	2	@ 3
Beans, String, # lb.....	1 1/2	@ 2 1/4
Beans, Wax, # lb.....	2	@ 3
Cabbage, choice garden, # 100 lbs.....	50	@ 65
Corn, Green, Alameda, # crate.....	1 00	@ 1 50
Corn, Green, # sack.....	75	@ 1 25
Cucumbers, # large box.....	30	@ 50
Egg Plant, # large box.....	40	@ 65
Garlic, # lb.....	1 1/2	@ 2
Onions, Yellow Danver, # cental.....	45	@ 55
Okra, Green, # box.....	40	@ 60
Peas, Sweet garden, # lb.....	3	@ 5
Peppers, Green Chile, # box.....	40	@ 65
Peppers, Bell, # box.....	40	@ 65
Summer Squash, Bay, # large box.....	30	@ 50
Tomatoes, # large box.....	30	@ 60

POTATOES.

The market has presented a somewhat unsettled tone this week on account of the railroad authorities having given notice that the cut rate of 55c. per cental to Texas and Arizona points would be withdrawn on the 30th inst. and the old rate of 75c. be put in force. What effect this will have on the market remains to be seen. Some who are prominent in the trade believe that values for choice potatoes will not be materially affected. Common qualities are now hard to place, even at decided concessions to buyers.

Burbanks, Salinas, # cental.....	90	@ 1 15
River Burbanks, good to select, # cental.....	40	@ 65
Early Rose.....	—	@ —
Garnet Chile.....	—	@ —
Sweet Potatoes, # cental.....	1 25	@ 1 40

The Fruit Market.

FRESH FRUITS.

Aside from Apples and Grapes, there were no heavy supplies, and the market as a whole showed fairly healthy condition for desirable qualities. In quotable values there were no radical changes to record, but transfers of good to choice were in the main at full figures current. High grade Apples were in good request. Fancy 4-tier stock was quotable up to \$1.25 per box. Apples of poor quality sold down to 25c. per box. Bartlett Pears are now arriving very sparingly, and for such as are hard, sound and in every way desirable, higher figures than were warranted as quotations were possible. This sort was

so scarce, however, that they were not quotable in a regular way. Peaches were without radical change, but there was a large proportion of offerings for which full figures could not be realized, owing to fruit being too ripe or otherwise faulty. Plums showed materially decreased receipt, but of Prunes there was no scarcity. Table Grapes were plentiful and market presented an easy tone. Wine Grapes were in better supply than preceding week, but for desirable stock the market was firm. Melons were in good supply, but were in active demand, the weather being quite favorable for consumers taking hold. Berries did not make a very extensive display, but prices varied little from those of preceding week, the demand being limited.

Apples, # fancy, 4-tier box.....	1 00	@ 1 25
Apples, good to choice, # 50-lb. box.....	60	@ 90
Apples, common to fair, # 50-lb. box.....	25	@ 50
Cantaloupes, # crate.....	75	@ 1 25
Cranapples, # small box.....	40	@ 75
Blackberries, # chest.....	3 0	@ 4 00
Raspberries, # chest.....	6 00	@ 8 00
Figs, 1-layer box, 40@65; 2-layer.....	65	@ 1 25
Grapes, Fontainbleu, # crate.....	25	@ 50
Grapes, Isabella, # crate.....	40	@ 65
Grapes, Muscat, # crate.....	30	@ 75
Grapes, Black, # crate.....	30	@ 65
Grapes, Seedless, # crate.....	40	@ 75
Grapes, Tokay, # crate.....	40	@ 85
Grapes, Zinfandel, # ton.....	27 00	@ 30 00
Grapes, Mission, # ton.....	25 00	@ 27 00
Grapes, Tokay, # ton.....	15 00	@ 18 00
Nutmeg Melons, # box.....	30	@ 50
Peaches, # box.....	25	@ 60
Pears, Bartlett, No. 1, 40-lb box.....	65	@ 60
Pears, common, # box.....	30	@ 60
Plums, choice large, # box or crate.....	40	@ 50
Plums, small, # box.....	30	@ 40
Prunes, # crate.....	25	@ 50
Pomegranates, # box.....	75	@ 1 25
Quinces, # box.....	35	@ 65
Strawberries, Longworth, # chest.....	6 00	@ 8 00
Strawberries, Large, # chest.....	3 00	@ 5 00
Watermelons, # doz.....	1 00	@ 2 50
Whortleberries, # lb.....	4	@ 6

DRIED FRUITS.

While there is considerable doing in dried fruit, the bulk of present operations is in the filling of orders booked prior to the opening of the season. Inquiry is most pronounced for high-grade fruit, and for this sort the market is decidedly firm, especially for Apricots and Peaches, choice to select of which are being actively sought after, and in some instances higher figures than are warranted as quotations are being realized. Fancy Moorpark are in scanty stock, and it is difficult to say what a round lot of this sort would command, but in all probability more than it would be safe to quote at this date in a regular way. High-grade Pears are scarce and wanted, but as few of these were sold for forward delivery, there is not as much eagerness to obtain stock of this sort as in the case of apricots and peaches, although it is much more difficult to secure noteworthy lots of choice to fancy Pears than it is to find buyers at good prices. New crop Prunes have begun to move outward, and for the four sizes the market appears fairly firm at 2 1/2@2 3/4c, with the bulk of business at the inside figure. In shorting the Prune market, it looks very much as though some dealers had sold more 40-50's than they can deliver. This sort is sought after at half a cent premium over the schedule rate, bringing the price up to 4 1/4@5c.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5 1/4	@ 6
Apricots, Moorpark.....	7	@ 9
Apricots, Royal, good to choice, # lb.....	5	@ 6 1/4
Apricots, Royal, fancy.....	6 1/4	@ 7
Figs, 10-lb. box, 1-lb. cartons.....	30	@ 60
Nectarines, # lb.....	4	@ 4 1/4
Peaches, unpeeled, choice.....	4 1/2	@ 5
Peaches, unpeeled, fancy.....	5 1/4	@ 6 1/4
Pears, halves, fancy.....	6 1/4	@ 7 1/4
Pears, halves, choice.....	5 1/4	@ 6
Pears, halves, fair to good.....	3 1/4	@ 4 1/4
Plums, Black, pitted.....	4	@ 5
Plums, Red and Yellow.....	5	@ 6
Prunes, Silver, good to fancy.....	3 1/4	@ 6
Prunes, in bags, 4 sizes, 2 1/4@2 3/4c; 40-50s, 4@4 1/4c; 50-60s, 3 1/4@3 3/4c; 60-70s, 3@3 1/4c; 70-80s, 2 1/2@3 1/4c; 80-90s, 2@2 1/4c; 90-100s, 1 1/2@1 3/4c.		

COMMON SUN-DRIED.

Apples, sliced.....	4	@ —
Apples, quartered.....	3 1/4	@ —
Figs, White, in bulk.....	3 1/4	@ 3 1/2
Figs, Black, in sacks, # lb.....	2 1/4	@ 3
Plums, unpitted, # lb.....	1 1/4	@ 2 1/4

RAISINS.

The announcement of the association prices for current crop is looked for on Saturday of this week, the 27th inst. In the meantime some new crop Raisins are being shipped, subject to the official card rates yet to be determined.

CITRUS FRUITS.

Oranges are still offering, late Valencias and Seedlings, in moderate quantity, with asking prices much the same as for several weeks past, but the fruit is not meeting with much inquiry. Lemons are in very fair request, but there are abundant supplies and no quotable improvement to record in prices. Limes are in ample stock for current needs and market is easier than last quoted.

Oranges, Late Valencia, # box.....	2 00	@ 4 00
Seedlings, # box.....	1 50	@ 2 25
Lemons—California, select, # box.....	2 75	@ 3 00
California, good to choice.....	1 75	@ 2 50
California, common to fair.....	1 00	@ 1 50
Limes—Mexican, # box.....	4 50	@ 5 00

NUTS.

Almonds are in fair request, with offerings rather light and market moderately firm. The Walnut market is firm. It is stated that orders already booked will about absorb all the stocks of the association at the prices fixed last week. Peanuts are in very moderate supply and prices are ruling steady.

California Almonds, shelled.....	16	@ 20
California Almonds, paper shell, # lb.....	11 1/4	@ 12 1/4
California Almonds, soft shell.....	9	@ 10
California Almonds, hard shell.....	7	@ 8
Cal. White Walnuts, No. 1 soft shell.....	10 1/2	@ 11 1/4
Cal. White Walnuts, No. 2 soft shell.....	—	@ —
Cal. White Walnuts, No. 1 hard shell.....	10	@ 10 1/2
Cal. White Walnuts, No. 2 hard shell.....	—	@ —
Peanuts, California, fair to prime.....	4 1/4	@ 5 1/4
Peanuts, Eastern, hand-picked.....	6	@ 6 1/4

WINE.

Trade in the wholesale wine market is of light volume, as is to be expected at this time of year. There is little wine offering at present from first hands, and not much upon which to base quotations for same. Quotable values for dry wines of last season's vintage may be said to be 22@26c per gallon for good to choice stock, with selections held at an advance. Market for wine grapes is firm, with demand good. The Wine Association is paying in Napa county \$28@30 per ton, latter figures for all grapes which have to be hauled 10 miles or more, and in some instances the top figure is being paid for near-by grapes, where the quality is especially desirable. Sweet wine grapes range from \$12@20, as to kind and quality.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	116,319	1,499,010
Wheat, centals.....	58,753	1,148,947
Barley, centals.....	285,204	2,006,817
Oats, centals.....	21,349	188,768
Corn, centals.....	1,130	12,614
Rye, centals.....	673	66,154
Beans, sacks.....	13,121	18,247
Potatoes, sacks.....	27,854	274,947
Onions, sacks.....	10,799	65,447
Hay, tons.....	3,182	52,359
Wool, bales.....	2,234	16,858
Hops, bales.....	315	532

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	38,524	1,006,416
Wheat, centals.....	106,065	1,112,764
Barley, centals.....	166,197	1,389,965
Oats, centals.....	1,035	8,759
Corn, centals.....	1,073	10,197
Beans, sacks.....	286	3,941
Hay, bales.....	7,132	36,665
Wool, pounds.....	24,000	340,507
Hops, pounds.....	432	5,202
Honey, cases.....	70	719
Potatoes, pack's.....	2,552	16,588

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ON THE ROAD.

In San Joaquin Grain Lands.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

MADERA.—It is said that "coming events cast their shadows before"; but in the case of Madera it can hardly be said that it is a shadow that is cast. It is rather rays of light. Whatever it is that is cast it is indicative of more irrigation; more alfalfa, more dairying and cattle raising for market; more orchard and vineyard acreage. The Madera Canal & Irrigation Co., taking water out of the Fresno river by ditches, one several miles east of Madera and another much further east, as an additional intake to conserve the waters of the river in summer time, has had surveys made for the building of two reservoirs east of Madera. And it is believed by some that the suit now pending between Henry Miller of Miller & Lux, and the first named company, over water rights, indicates a determination on the part of Mr. Miller, or his firm, who are locally said to "own the San Joaquin river"—an expression which is somewhat of an exaggeration, but conveys the right general idea—to create an irrigation ditch system in Madera county at some date in the future, which will exceed in size the present system.

There is already some progress being made about Madera in the way of alfalfa, dairying and good stock. Some time ago the San Joaquin Ice Co. (creamery department) sold into this section quite a number of head of thoroughbred Jersey and Holstein cows and bulls for dairy purposes. The Return Roberts milk dairy has some fine cattle of these strains, and the Woodson milk dairy also some good stock. Of creameries working for butter-fat there are the Sayre creamery, the Borden Farm Co. creamery, the Borden & Freeland creamery, which is indirectly reported to sell its butter-fat, from 100 cows, to the S. J. Ice Co. creamery, and which is reported to have the only pumping plant for irrigation in the county, and the S. J. Ice Co.'s own skimming station.

Much of the land of Madera county is owned in large tracts by Return Roberts, Miller & Lux, the Sharon estate, Sacramento Bank and others; but the indications are that within the next few years there will be considerable break up, perhaps first in the Sacramento Bank lands. Madera town seems quite thriving, owing to the resumption of running of the lumber working mills, which just about got under good headway last year. It is claimed by one local newspaper authority that within that time 100 then vacant houses have been filled and as many more built and rented. Certain it is that Madera has a grey stone Court House, like the new San Francisco Postoffice, built from stone quarried at Raymond, 17½ miles from Madera; a jail in feudal style of architecture, which seems quite appropriate; a handsome brick high school and another large school building, all of which would do credit to any town in California; and three newspapers, one of them with a daily edition, all seemingly finding a niche and serving some purpose in the comparatively small community and small and sparsely settled county, so that there must be considerable vigor in the county somewhere, capable of greater extension.

The congregation of St. Joachim, Ro-

man Catholic, have just gotten the furniture settled in a new church building, very plain, but handsome inside, which, with furniture, will cost fully \$4000, and other denominations have handsome houses.

H. S. Williams of North Fork, whose olives went to waste last year, is arranging to put them into the oil press this year. S. J. Perkins of Madera has also a fine grove.

The town has one raisin packing house, owned by the A. L. Sayre Fruit Co., Mr. Sayre being a director in the California Raisin Growers' Association. The Midvale Land Co., at the edge of town, markets its output of all kinds of fruit from 360 acres, selling most of the packed fruit direct in Pennsylvania.

The Italian-Swiss Colony winery and distillery is located 3 or 4 miles to the south, and is reached by a spur of railroad track from the Southern Pacific.

One of the most pleasant features of Madera is a large, cemented, open air swimming reservoir, about 70x125 feet area, and from 4 to 10 feet deep, with dressing rooms and a pretty dancing hall on its banks, all lighted by electricity, located on the residence property of D. P. Osborne, in the heart of town. It is a source of health and delight to the children and young people, not entirely excluding the older ones from its pleasures. It is locally known as Lilly lake. The water is supplied from two wells by engine and pumps, and the place is well shaded with trees. Mr. Osborne is one of the farmers who in a few years have gotten rich raising grain. The lake is on his town place.

MERCED COUNTY.—Two things can truthfully be said about Merced county: One is that, though there are some good local newspapers in it, it is a poor place for such newspapers—it is too peaceful a section. Another is that it is notable among counties for the well-balanced and extensive diversification of its crops and business interests—hay, wheat, fruit, both deciduous and citrus, cattle and mining. The renewed development of mining in Mariposa county helps Merced largely, as well as Mariposa. For awhile the failure of the Rotterdam colony of Hollanders was unjustly injurious to the reputation of Merced county and the Crocker-Huffman Land & Water Co., but it is an open secret now that the Hollanders choice of land was made for them by a Holland lawyer, was based more on beauty of scenery than on geological formation, and was strenuously opposed by C. H. Huffman. Other men, and even some of the original colonists, who gave most of their attention to horticultural work, have since made success on the same ground, and are now enjoying the fruits of well directed and persistent labor. There are now cosy homes and thrifty farms where once the verdict of "impossible" was rendered.

A mile from Merced, on the line of the S. P. railway, is one of the model creameries of the State, owned by the Crocker-Huffman Co. mostly, and is managed by C. H. Schmidt, formerly of Selma. This creamery has an ice and refrigerating plant, burns oil as fuel, and is lighted by electricity; it cost \$10,000, can care for the milk of a thousand cows, and is known as the Fountain City Creamery. The output of all the several creameries in the Merced section is publicly stated at about a ton a day. The Crockers put in over 800 acres of alfalfa last year, which shows one of the directions progress is taking.

The greater part of the development in Merced county now is taking place in the northwestern and southeastern corners of it, around Le Grand in a citrus and other fruits way, and around Atwater in a sweet potato and fruit way, in fruit principally peaches. The section around Le Grand, like that about Orland, seems particularly adapted to orange raising, Le Grand being underlaid with a strata of water-bearing gravel, like various of the best sections of California. At Atwater, the section peculiarly adapted for and now pretty well occupied for sweet potato raising, is only about 4 miles long and 1 mile wide, with another undeveloped section believed to be as well adapted running out of it like a spur on one side. The land is light sand and free from flint,

but is not blow sand. It usually produces 125 sacks of 120 pounds each to the acre. Over 700 carloads were shipped from Atwater last season. There are usually several buyers in the field. The first shipment of sweets from various sources was made this year from Merced August 9, but usually the heaviest shippers are local Atwater parties. When dug and not wanted for immediate shipment the potatoes are stacked like cordwood in special ranch cellars, made half in the ground and half out, and there remain undisturbed until wanted for market. It is claimed for the Atwater grown sweet potatoes that they are the only ones without strings in their composition, allowing their substance to pass easily through a colander and making them superior for evaporating and canning purposes, in which way it is expected they will be more used in the future. The too large and too small potatoes, with the tops, are often used for stock feed. The value of the crop this year to the growers, of whom there are about 170, is estimated at \$180,000. The crop is about two weeks late in getting on to market this year, and is expected to be about 100 cars short, owing to unprecedented disturbances in May, which injured the quantity somewhat, but had no effect on the quality. That sweet potatoes are by no means the only output from the Atwater section is evidenced by the following statement of car lot shipments last year: Fruit, green, 25 cars; dried, 20; watermelons, last year 1, this year's estimate 10; sweets, last year 700, this year 600; fresh grapes, table 7, wine 55, all grown within a radius of a few miles of Atwater, which is in the midst of orchard. This fall and next year there will be considerable development in this section in the direction of alfalfa acreage, dairying and stock raising, west of town. President G. S. Bloss of the Fin de Siecle Co. will put in sixty acres of alfalfa. A new railroad depot has just been completed, and five new houses are now going up within half a mile of it.

In the generally level country about Atwater there is one low hill, just west of the railroad, from which all the surrounding country for miles can be seen in panoramic shape. On that side of the railway line, including the sweet potato growing region, with scarcely any exception, the owners are people from Portugal, often spoken of locally as the Portuguese colony, and on the other, or Buhach farm side of the railroad, owners are mostly Americans, but the relations between the two are most friendly. The Portuguese have proved themselves intelligent, kindly and enterprising neighbors, who have made their money mostly out of potatoes, but are not averse to going into other lines. They are putting up a society hall, 30x60 feet, two stories, to cost \$2200.

There is a world of other good things that could be truthfully said about Merced county in the way of cattle, fruit and creamery products, but this column will permit only space enough to note the directions of development. The west sides of San Joaquin, Stanislaus and Merced counties naturally form a section by themselves, devoted largely to alfalfa hay, creameries, cattle and poultry raising, having the Miller & Lux ditch system for irrigation. With the Crocker-Huffman system on the more extensive east side this gives the whole county abundance of water, and those who may be dissatisfied with ditch systems can easily reach water through wells and pumps. One of the most interestingly written, clearest and most truthful presentations of the county is that gotten out in April of this year by the Merced Sun.

Surely as night follows day sicknesses follow the eating of unripe fruit or stale vegetable. Every housekeeper should keep Perry Davis' Pain-killer in the house in summer. It gives instant relief and speedy cure.

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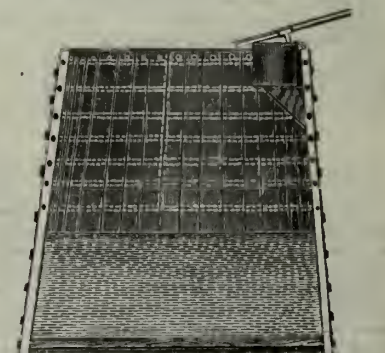
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R. F. WILSON, Prop., Stockton, Cal.

THE FIELD.

The Sorghums as Forage Plants.

The sorghums have occupied a prominent place in the list of Kansas crops almost from the State's agricultural beginning, being among those enumerated in the earliest statistics of the Board of Agriculture. These pioneer sorghums were mostly, if not wholly, of the saccharine varieties, and served a triple purpose, viz., for the manufacture of syrup, later of sugar and for forage or grain—now, however, more for the latter. Conditions and circumstances seem to have halted at least for a time the manufacture of sugar from sorghum, and interest in sorghum syrup making is likewise gradually waning, as twenty years ago the acreage grown for that purpose in Kansas was considerably over twice as large as now, while the area planted for forage in 1902 is greater than then by 905%. It was early found that these sorghums were admirably adapted to that part of Kansas where corn is not considered a reliable crop, and their cultivation and use were widely extended throughout that region with commendable promptness. As their merits became better known, their acreage became more and more extended until every county in the State had a greater or less area.

In 1883 the area of sorghum for forage or grain was 53,771 acres in forty-nine counties; in 1902 there are 540,855 acres in the 105 counties of the State—this of the sweet varieties—and until ten years ago they had no competitor for public favor. In 1893, however, statistics revealed a rival in Kafir corn, one of the non-saccharine sorts, and its area was given then as less than 47,000 acres, against nearly 173,000 acres of the saccharine kinds, for forage, grain and syrup, for the same year. In 1902 the total area in Kafir corn alone is 748,176 acres and of the saccharine varieties 561,266 acres—a difference in favor of the former of 186,910 acres, or 33.3%. As forage plants, the sweet sorghums rank equally with the non-saccharine, such as Kafir corn, Jerusalem corn and milo maize, particularly in western Kansas, where higher altitude and drier atmosphere are especially favorable for their curing and keeping.

While these figures indicate their progress as competitors for popularity and disclose the large difference between their annual plantings, they by no means depreciate the value of the saccharine or disturb it in the ranks of the best known forage plants in the world, but show the marvelous advancement made by its youthful kin, which claims not only abundant foliage of first-class quality, but a fattening value in its grain almost, if not quite, equal to Indian corn.

The statistics as returned to the State Board of Agriculture for 1902 show that Kafir corn has gained in Kansas in the past year nearly 130,000 acres, or 21%. Saccharine sorghums for forage and grain have also made excellent progress in areas, and have now over 500,000 acres devoted to their growing, which is practically the same as last year and the year before (1900), when they reached the highest mark, or 542,622 acres. Kafir corn, however, has shown a steady increase, excepting a slight setback in 1897. After three years trial, the statistics for the fourth year (1896) mutely show the Kansas farmers' emphatic approval of this new plant by devoting an area to its production considerably larger than that given to the saccharine sorghums, and

its plantings continued to increase while the sorghums appeared to make no gains in recent years.

It is a significant and noteworthy fact that the prosperity of the past decade is contemporaneous with the recognition of alfalfa and Kafir corn in the agricultural economy of Kansas, and no one can successfully deny that these two crops have been big factors in its realization. By the fact that Kafir corn can be successfully grown in all localities, of its being a strong resistant to protracted heat and dryness and its proved feeding qualities, close or practically equal to corn, it promises to become a principal resource in a region where live stock is the predominating interest and the production of corn something of an uncertainty.

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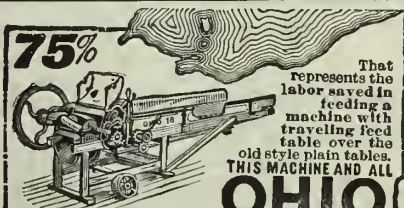
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AN ACRE OF CORN
and its possibilities.

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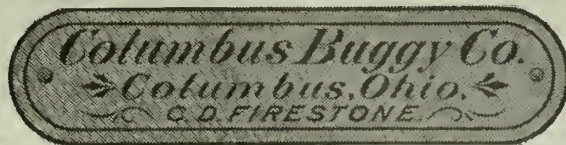
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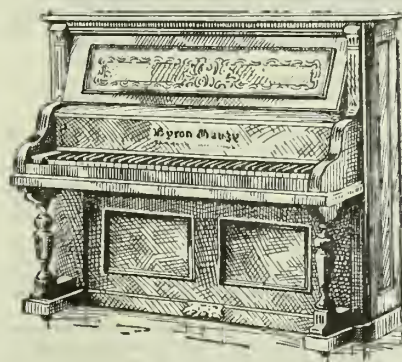
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IT WILL PAY YOU TO SEE US.

San Francisco House, Market St. bet. 9th and 10th,
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Has stood the test of time and is to-day the most favorably known of any. We can refer to stockmen who have successfully re-vaccinated and stopped losses with our vaccine after unsatisfactory trial of foreign and other vaccines.

POINTERS.

Don't pay more for vaccine of uncertain age than we charge for a superior vaccine of known freshness. Refuse to accept any not dated or that is dated more than six months ahead of the date of your purchase.

Don't use strings if you have a large bunch of cattle and want to make time. The use of our powder vaccine with our regular outfit is much the easiest and quickest method. Besides, the immunity conferred thereby is more permanent.

NOTE OUR PRICES — THEY ARE LOWER THAN ALL OTHERS.

SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
DOUBLE, per double package, containing ten to twenty doses, according to age of animals.....	1 75
STRINGS, per package of 10 doses, including needle.....	1 25
Per package of 15 doses, including needle.....	1 75
Per package of 25 doses, including needle.....	2 50
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VACCINATING OUTFIT, complete, including syringe, for using single and double vaccine.....	4 00
BLACK LEG SYRINGE, with two needles and extra washers, all in metal case.....	3 00

TERMS.—Cash with orders or we will send by express, C. O. D. We prepay all charges. Special discount to users of 500 or more doses.

Write us for booklet on Black Leg; it is readable and interesting even if you apprehend no trouble from this disease.

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OUR SPECIALTIES —Black Leg Vaccine; Hog Cholera Serum; Cutter's Scour Cure; Cutter's Lump Jaw Cure; Cutter's Antiseptic.

Protect your calves against Black Leg with

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FT. WORTH, SAN FRANCISCO.

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY,

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

A. W. GLEASON,
Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

California and Oregon State Fair of 1902.

(Continued From Page 198)

shires in swine. There were also several exhibits in O. I. C. swine, though not of superior animals, compared with those shown in California. The horse show in draft animals was fairly good—about the same as that in California. The show of poultry was good, and that of side shows exuberant. All the mercantile exhibits, including vehicles (outside of machinery, which was passable), were small compared to that of her more southerly sister State. Fully as much attention was given to racing as in the latter. The stock judges in Oregon were N. H. Gentry of Missouri, from whose breeding farm some of the best prize winning Berkshire and Poland-China swine in California have come, who judged the Shorthorn cattle and the swine, and Prof. W. L. Carlyle, who judged the other breeds of cattle and the sheep, but with a smaller quantity of that explanatory and informational talk which was a valued feature of the California State Fair. Entry cards on stock exhibits at Salem did not give name of animal nor owner. All of the exhibits at the Oregon State Fair, including those of the pavilion, which is a one-story, L-shaped building of about one-half the capacity of the California building, not including the machinery sheds, are made on the fair grounds, which are about 2 miles from the heart of Salem, and are reached by street railway facilities which are quite inadequate during fair time. Oregon people, however, are notably kind, taking difficulties with a good natured patience which is commendable. Hundreds of them camp for the week in tents and small wooden buildings in a grove just outside the fair ground entrance, and enjoy themselves in a homeful and wholesome way. Railroad transportation for live stock is free to and from the fair to stock not changing owners, and the State Agricultural Association furnishes hay free for the live stock, exhibitors furnishing their other feed. Numerous restaurants on the grounds furnish meals at reasonable prices, but "strong" drinks are not sold on the grounds, except at the race course. The attendance was good at both the exhibits and the races. The official management of the attendance was simple and courteous. On "Salem day" most of the business houses closed for half a day.

The Sparks herd of Herefords from Reno, Nev., which has so often been a feature at the California State Fair, was shown at the Oregon State Fair at Salem this year, and captured the following prizes in its class with the animals named:

Bulls, three years or over, first, McCord, exhibitor McKinney; two years old, first, Perfection II; second, Lalax; one year old, first, Norman Alamo; bull calf over six months, no entry by Sparks; under six months, first, unnamed; cows, three years and over, first, Ida May; two years old, first, Clarice Alamo; second, Phoebe Alamo; one year old, third, Duss Alamo; for best exhibitor's herd, first, Perfection II; second, Ida May, Clarice Alamo, Duss Alamo, Diste Alamo; for best breeder's young herd, first, Norman Alamo, Duss Alamo, Downey Alamo, Lady Laughter; second, Diste Alamo; sweepstakes, bull two years or over, Perfection II; bull under two years, Norman Alamo; cow, two years and over, Clarice Alamo; (heifer under two years, taken by Wade); breeder's premium, four animals, get of one bull, Clarice, Phoebe, Caroline and Eva Alamo; for two animals, either sex, under four years of age, produce of one cow, Caroline Alamo and an unnamed bull calf out of Lady Alamo XV by Admiral. With one or two other exceptions than the one first noted the second premiums on Herefords went to Wade. The winners for best individual cows in the Holstein class were Peek-a-Boo Artis (40,505; milk record 1519 pounds in thirty days), aged six years, and Carlotta Abbekirk Gerbon (46,003; milk record sixty-eight pounds in one day), aged eight years, both owned by

P. A. Frakes, Lakeside Stock Farm, Scappoose, Or.

If the Sparks herd of Herefords had been shown at the California State Fair this year they would have made the race for the sweepstakes in beef breeds very interesting for the Shorthorns. The statement is made by Superintendent Spriggs that they were not shown on account of conflicting State Fair dates in the two States, and a previous promise to make the northern circuit.

The premium list of the Provincial Fair at Victoria, B. C., October 7-11, is a model one, especially in a typographical way. It might well be somewhat patterned after by Americans.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

Breeders' Directory.

HORSES AND CATTLE.

HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke 30 Montgomery St. S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry, William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

A. J. C. C. J. F. R. E. Y. S. Service bulls of noted strains. Joseph Maillard, San Geronimo, Marin Co., Cal.

9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS—Devon and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER SAKS & SON, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

SWINE.

THOMAS WATTE, Perkins, Cal. Prize-winning Berkshires. Pigs for sale.

SUTTON BROS., Lodi, Cal. For sale, 1 Registered Poland-China Boar and 2 Glts, 5 months old.

POLAND CHINAS.—Call and see our show herd at State Fair. Bred sows for sale. S. P. Lindgren & Sons, Kingsburg, Cal.

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R. H. CRANE Santa Rosa, Cal. Breeder and importer of South Down Sheep.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

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of having the best large herd of swine in the State. We won 23 ribbons at the State Fair, which is the largest number in our history. We have more first-class animals in our herd than ever before and the young stock now ready to ship are fine specimens. We cull our pigs closely and will send out only those we think will prove good breeders and he a credit to any herd. Write for what you want and we will name prices.

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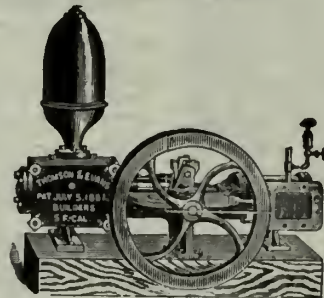
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WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/2 inches deep, and 15-gallon reservoir. Weighs 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo., Dept. 8. Will ship C. O. D. with privilege of examination.



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combines scientific and practical ideas. Over 50,000 in use. No valves to get clogged and foul. Easily cleaned. Nipples are reinforced. Prevents scour. Increases digestive capacity in the dairy calf. Makes a "set back" from the "starving process." Satisfaction guaranteed or money refunded. Awarded Gold Medal at Pan-Am. Exp. Sold everywhere in U. S. and Canada. Price \$1.50. Sent postpaid for \$2.00, and a 50c box of Cows' Relief free, that will cure Caked Bag in 12 to 24 hours. Heals sore teats. Send for descriptive matter and 22 reasons for using feeder. O. H. MFG. CO., Dept. 17, Lyndon, Vt. (Baker & Hamilton, San Francisco, Cal. COAST AGENTS, Lilly Hazard & Co., Seattle, Wash.)



"Fourth Bend" Chilled Plow. Vehicle and Implement Catalogue sent on application. HOOKER & CO., SAN FRANCISCO.

Patrons of Husbandry.

Tulare Grange.

Tulare Grange held its regular semi-monthly meeting on the 20th.

The third and fourth degrees were conferred by Bro. Shoemaker and an excellent lunch had.

After the lunch the Grange subject for the day, "The adulteration of food and drink is a greater evil than floods and cyclones," was discussed. The reasoning and argument were that floods and cyclones are very casual, particularly with cyclones—rarely occurring twice in the same place—while the adulteration of food and drink at all times can be found in all communities. While boards of health are doing much to prevent such adulterations, much more can and should be done in that line.

The question box was then opened and the following questions drawn and read therefrom:

1. How long should fruit be dried, exposed to the sun and stacked on trays?
2. How ripe should fruit for drying be to make the best quality of dried fruit?
3. What causes split pits?
4. How long should fruit be sulphured to kill all germs and not flavor the fruit?

In the discussion of these subjects it was conceded, in answer to the first question, that the time depends on the condition of the weather, generally, in our clear, warm months of July and August, two days exposed to the sun, two days on the stacked trays, when the trays should be scraped and the fruit from four to six trays put on one, and the trays with fruit on again stacked for two days in the open air will be sufficient, when the fruit may be placed in the bin. Later in the season, as the weather gets cooler and damper, more time to cure fruit is necessary.

It was admitted that the object of drying fruit is to cure it; when dried it should be pliable, but not excessively dry, to make the best cured fruit. The foregoing methods answer for apricots, nectarines, peaches and prunes. Pears in warm weather, after one day's exposure to the sun, can be stacked and cured on the trays.

In answering the second it was conceded that well-ripened fruit, before any decay has begun, makes the best dried fruit.

The third question was not answered.

In considering the fourth question there seemed to be more of a diversity of views and practice. No rule was laid down. Each one sulphurs to suit his own ideas—from three hours to all night—and each claims to have good results. It was conceded that in some instances more sulphuring is done than is essential to kill germs and put the fruit in good marketable condition.

The October subject for consideration is, "What Grange exercises are most productive of mental development among members?" with the alternative, "Is there any excuse for any officer not having the ritual work memorized?"

The committee on resolutions was granted until next meeting to report.
J. T.

The State Grange.

TO THE EDITOR:—We of Grass Valley Grange, No. 256, P. of H., were very glad to see an article in the PACIFIC RURAL PRESS of September 20 from "J. T." Having scanned eagerly of late the pages for news from the one live Grange in California (judging from your said pages), and not finding anything, we naturally feel overjoyed that "J. T." is still on deck and writes as entertainingly as ever, fearing that illness may have been the cause of his silence of late.

Does the editor know that the State Grange meets on October 7 in Sacramento? We have not seen a word in that connection in any issue of the PACIFIC RURAL PRESS. Our State officers never seem to write anything for publication, but seem to verily "hide their lights under a bushel."

Mrs. R. S. TWITCHELL.
Grass Valley, Sept. 22.

FRUIT MARKETING.

Prunes and Walnuts.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

As to prunes, there is no need to modify former reports. There are simply none worth considering. A dealer who had just made the tour of the prune raising Departments said to me yesterday:

"It is pitiable to see the utter bareness of the prune trees. I do not know what the growers of prunes are going to do."

At the same time prunes are being shipped from this port to the United States in glass jars at 18c per pound, f. o. b., including jars and packing charges.

As to walnuts, the last month has been peculiarly favorable for them. The growth has been very good without any falling fruit. There are now estimates putting the yield as high as one-half an ordinary crop, and they are expected to be of good quality. The yield is very irregular, however, through the walnut bearing region; in some places almost none and in others quite a yield. This condition makes estimates quite unreliable. Thus far one-half an ordinary crop is the outside estimate. Walnuts are being shipped from here to the United States at this time, perhaps as of the present crop, but not really so, at about 5½c a pound f. o. b.

ALBION W. TOURGEE,
U. S. Consul.
Bordeaux, France, September 1, 1902.

New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

- FOR THE WEEK ENDING SEPTEMBER 9, 1902.
- 708,601—OIL BURNER—G. W. Arper, Oakland, Cal.
 - 708,617—LETTER RECEPTACLE—D. F. Bennett, Redding, Cal.
 - 708,693—HYDRAULIC NOZZLE—P. Bouery, Weaver-ville, Cal.
 - 708,755—ELEVATOR—M. A. Glennan, S. F.
 - 708,596—GAS GENERATOR—E. R. Cook, Sacramento, Cal.
 - 708,696—PACKAGE—E. H. Davis, Mesa Grande, Cal.
 - 708,626—ELEVATOR—L. W. Dexter, San Jose, Cal.
 - 708,629—WINDOW SHADE CARRIER—A. W. Ellis, Sumpster, Or.
 - 708,702—BOX FASTENING—E. Fletcher, S. F.
 - 708,632—REGISTER AND ALARM—L. E. Fugate, Seattle, Wash.
 - 708,975—BAKERS' OVEN—C. E. Glaske, Los Angeles, Cal.
 - 708,763—PERFORATING PIPES—E. R. Graham, Bakersfield, Cal.
 - 708,707—KILN—Gray, Gray & South, S. F.
 - 708,708—ELECTRODESEPARATOR—A. W. Harrison, Los Angeles, Cal.
 - 708,881—BORING MACHINE—B. E. Harvey, Ritzville, Wash.
 - 708,883—GAS GOVERNOR—D. E. Hodgson, S. F.
 - 708,893—OIL BURNER—C. G. Lundholm, San Bernardino, Cal.
 - 708,896—SPRING HINGE—E. Mathis, Miles, Or.
 - 708,908—RAILWAY RAIL JOINT—T. C. McLin, Seattle, Wash.
 - 708,899—CAR FENDER—E. C. Moulton, San Jose, Cal.
 - 708,913—HAT—A. Olson, San Diego, Cal.
 - 708,594—MESSAGE BOX—A. F. Shriver, Arbuckle, Cal.
 - 708,671—TELEPHONE MOUTH PIECE—Smith & Woolsey, S. F.
 - 708,675—PHOTO CARD MOUNT—P. J. Stuparich, S. F.
 - 708,676—HARNES—J. T. Surbaugh, Arbuckle, Cal.
 - 708,978—OIL BURNER—O. Tillman, San Jose, Cal.
 - 708,599—AMALGAM TRAP—G. R. Tuttle, Grass Valley, Cal.

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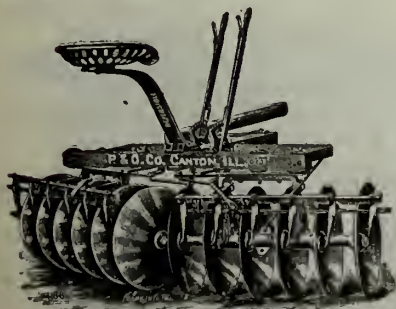
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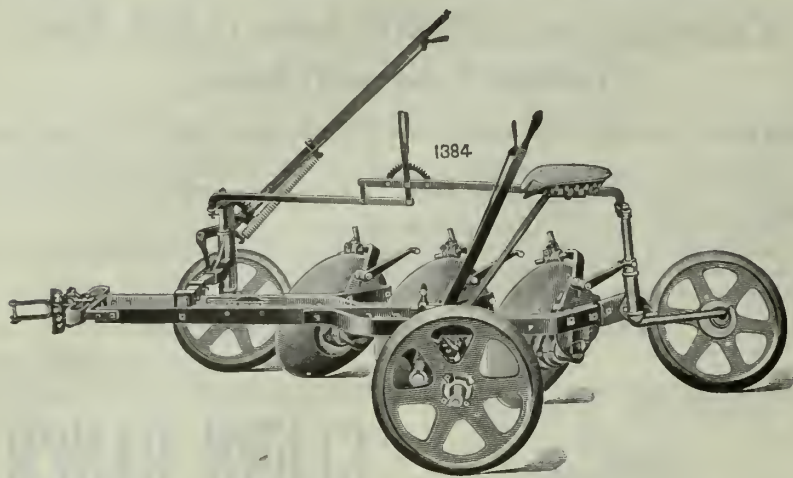


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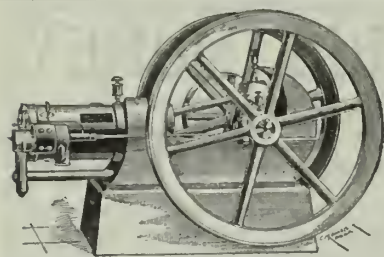
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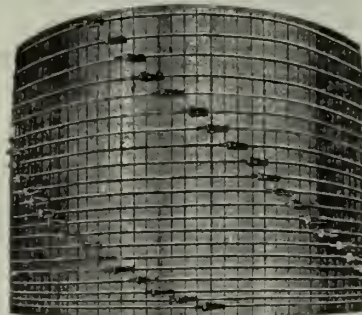
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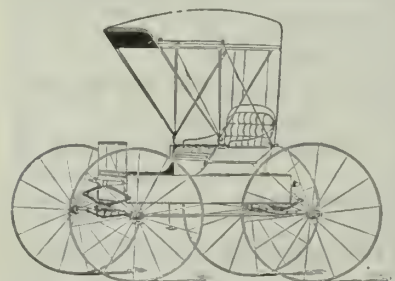


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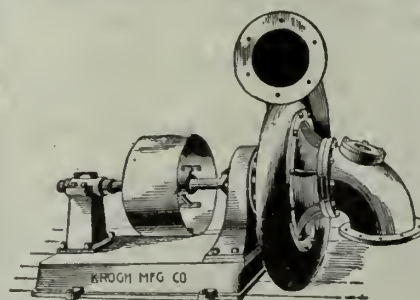
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 14.

SAN FRANCISCO, SATURDAY, OCTOBER 4, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Live Stock at the State Fair.

Unquestionably California is gaining rapidly in the elevation and expansion of her animal interests. This is growth just where we ought to have growth, and it must be gratifying to all who are looking for the symmetrical advancement of our agricultural industries and greater achievements in the home supply of food materials. To give the outside all that it will take of the special products which our climate particularly favor (and it would be hard to limit their number), and to give our own people everything they need in the freshest excellence and the highest quality—these are objects which will always commend themselves to our enterprise. This year's State Fair, which has been outlined in our columns, gives tokens of the advancing interest in live-stock interests. Many of the old exhibitors did their customary good work, but they were brought face to face with many new ones who are bringing much enthusiasm and free investment to the development of herds in which they take pride. This growth of the breeding interest will naturally attract the attention of more growers and the demand for better sires of all breeds will increase. The ultimate effect of this upon practical production and profit is almost beyond calculation.

We have a group of paragraphs on other pages of this issue about some of the breeders who took leading awards and some pictures of their animals, which will help readers who could not be present at the Fair. This account does not aim to be complete; the complete prize list was given last week. These are a few which seemed to our representative worth special mention without the reflection that others were not thus worthy. In fact, we expect to have others later, as arrangements may be made for them.

For the adornment of this page we select a few half-tones, concerning which the text is found on later pages.

The convention of the California Dairy Association at this year's Fair was unusually spirited and effective. The attendance was rather better than usual and the transactions timely. On another page we give the opening address of President Shields and other papers will follow as available for publication. One feature of the convention alone shows that such meetings are indispensable to those who propose to proceed in an up-to-date way.

The tub of butter which won first prize at the State Fair was presented to the convention and was the basis of a great deal of discussion. It was sampled by every one present and all seemed to concur in the judgment of the judges that its quality could not have been better. Its score was 99 $\frac{1}{16}$, which shows that the judges could find little fault in it. This butter was made by Eric Larsen of the Danish Creamery, Fresno. Mr. Larsen won the same prize last year, and thus the award becomes another of a series of victories for the alfalfa district, which a few years ago would have been deemed impossible and is now only possible on the basis of the highest skill and the best appliances of all kinds which a thoroughly modern creamery must possess. It is notable in the same line that the second in the list was Warren Meyers



"KING SPICY" of Howard Estate Shorthorn Herd. (See page 214.)



"DE NATSEY BAKER," No. 55471.—Winner at California State Fair, 1902, of first in two-year-olds, Holstein open class, and grand sweepstakes for best individual two-year-old of any standard dairy breed.



"FIDESSA," No. 43105.—Winner at California State Fair, 1902, of first for age cows, Holstein, open class, sweepstakes and grand sweepstakes for best individual in all standard dairy breeds.

of the Woodland Creamery, another interior valley alfalfa establishment, with a score of 98 $\frac{7}{16}$, while the old coast region did not assert itself until the third place fell to Wallace Stevenson of Mailliard's Creamery in Marin county with a score of 97 $\frac{1}{2}$. The fourth place was again in the alfalfa district at Isleton, Sacramento county, and the fifth again on the coast in Humboldt county. The interior valley has certainly demonstrated its standing as a butter country.

The Dairy Association proposes that the present active competition in demonstrating the best milking stock shall not grow less. It proposes to raise \$250 as a prize fund to be

given to dairymen whose herds show the largest butter production during the coming year, and it had an eye to the interests of local producers when it adopted resolutions asking the Government to supply the army and navy establishments on the coast with coast-made butter and cheese.

It is evident that something should be done before another year to make the State Fair facilities for housing and displaying live stock much better than they now are. This year they were not only inadequate, but not respectable nor wholesome. It is idle to expect breeders to bring their valuable animals to Sacramento unless they are decently and comfortably provided for. We are brought into disgrace in the eyes of the Eastern expert visitors when our show facilities are contrasted with what is now looked upon as essential in other stock-growing States. The coming Legislature should give attention to this matter.

THE State Board of Horticulture has yielded to the request of asparagus growers who fear the introduction of the destructive fungus known as asparagus rust, and has ordered that all asparagus roots and seeds raised anywhere outside of the boundaries of the State be prohibited from being planted or offered for sale, gift or distribution within the limits of the State of California. Asparagus rust is a native of Europe, and was introduced into this country in New Jersey in 1896, since which time it has spread over the whole of the Eastern and Central States, doing an immense

amount of damage. It also occurs as far west as Nebraska and the Dakotas, and it probably occurs everywhere east of the Rocky mountains. The epidemic of rust in the East has abated somewhat, though it annually causes much loss. It continues to be destructive in the West. If California growers purchase plants from the Eastern States, it will be practically impossible to avoid the introduction of the disease. Even the seeds may be covered with the spores of the fungus.

In consequence of the scarcity of negro labor in the cotton districts of Louisiana and Mississippi, the planters of these States have arranged for the importation of Mexican cotton pickers. The first party of 300 have arrived in Alexandria.



Ohio Improved Chester White of A. Gordon, Hueneme, Cal. (See page 214.)

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON Horticultural Editor

San Francisco, October 4, 1902.

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The Week.

Hot, dry air, moving in some regions, however, rather too rapidly, has, on the whole, pushed late fruits and fruit curing, and seems now to promise a full gathering-in before rains interfere. The gain in prices and the active trade in fruit and fruit products is fortunately giving the latter end of the season a better aspect than was anticipated. The outlook for intelligent extension of the fruit area is still good and the inquiry for nursery stock which some large growers report to us is warranted. Other lines of farm improvement are also commanding active attention, and affairs at leading centers promise a large volume of fall and winter trade. It looks as though anticipations of progress along all industrial lines would be amply realized.

The political campaign is getting very warm, but it will soon be over and is not expected to be a very serious diversion from earnest business effort. Those who enjoy the excitement should make the best of it while it lasts and then settle down to doing things.

Wheat sagged since our last report, but has now stiffened again and spot prices are the same as a week ago. There has been an active outward grain movement. Eight cargoes have gone out, four of wheat, one of barley, two of wheat and barley mixed and one of wheat and merchandise. The grain will strike the eastern hemisphere all the way from Cape Town to Cork and land about half a million dollars' worth—not to speak of a hundred dollars' worth of flour which has gone to China and South America. Barley is unchanged, but has rather slower market, and a bear movement in the buyers' interest is suspected. Oats are quiet and unchanged. Corn is firmly held and little in sight. Rye is stiffer, the asking price being advanced \$1 per ton. There is a brisk demand for large white and pink beans, whites being very stiff, perhaps to cover short sales. Mill-stuffs are firm, supplies being light and in few hands; rolled grain is steady. Hay is much as before—mostly in second hands and steadily held. Straw has sold at fancy prices. All meats are unchanged and firm, except small veal, which is in oversupply. The butter market shows little change; all fresh, except strictly fancy, being weak in competition with cold storage butter. Mild new cheese is firm; other sorts quiet. Fancy eggs are scarce and held high to work out stored eggs, some of which have been in for a very short term and go for fancy fresh. Poultry is in the main lower; there are considerable supplies both of Eastern and California, and much poor stock in sight. Choice young turkeys are doing well. Potatoes are quiet; some reds are selling above river whites. Onions are easy. Fruit prices are still fairly good for good lots, but quinces are in excess and low. Good to choice dried fruits are selling well. Raisins are going freely at the new

prices given in our Market Review this week. A few Valencia oranges are held higher but sales are not large. Lemons are unchanged. Limes are scarce, but more due to arrive. There is a fair trade in almonds and it is said that there are walnut orders enough here to cover the crop if prices do not go above limits. Honey is firm: nearly 500 cases have gone by sea to Europe. No new sales of hops are reported. The good wool is said to be largely covered by one leading Eastern firm and the control may be used to gather in the lower grades at buyer's figures. There is a slump in grain bags, one holder of three-quarters of a million offering to close out at 5 cents.

Just after our last issue went to press there was a meeting in San Jose of the directors of the Cured Fruit Association and the votes which have been held back to multiply were counted, showing that a quorum was not represented. Consequently the affairs of the Association remain in the hands of the old board of officers. They announce that the protest of the Healdsburg growers will be left to settlement by the courts, and differences with other parties will take the same course. The courts will also be called upon to determine in what manner future dividends shall be paid, and no money will be paid out except by order of the court on account of the protest of the Healdsburg growers. Concerning the nature of this protest we received a letter from a Healdsburg grower just too late for publication in this issue. It will appear next week. The directors announce the sale of the Santa Clara warehouse to E. F. Jordan and F. McArthur as trustees for the growers forming the new company. The price agreed upon is \$20,500, half cash, the balance in thirty days. It is expected many growers who have not subscribed will, in view of the purchase of the warehouse at about half its original cost of \$37,000, subscribe for enough of the stock of the new company to enable it to conduct the warehouse and business relating thereto. Thus the future seems to be definitely settled and there is little use in further comment. The institution will go on until electrocuted by the courts and the prune industry will proceed along its upward course, the experience in general organization becoming at length only a historical incident. The best future effort would seem to be to form strong local associations, with possibilities ere long of effective affiliation.

We are asked to mention the fact that the California Promotion Committee extends a cordial invitation to visit its headquarters at 25 New Montgomery street, where there is maintained a reliable information bureau regarding the city and State. It is the desire of the committee to enlist the co-operation of all in their work for the development of the State, and to that end it is hoped Californians generally will come and see for themselves the work that is being done by the committee.

Much interest should pertain to the tenth National Irrigation Congress which will be held at Colorado Springs next week, October 6 to 9. This will be the first meeting after the victory known as the National Irrigation Act, by the provisions of which the proceeds from sales of public lands will hereafter be devoted to the reclamation of the arid lands in the sixteen States and Territories affected, viz., Arizona, California, Colorado, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Utah, Washington and Wyoming. The importance of this great act of constructive legislation is not yet fully appreciated, even in the States most directly concerned. An entire day of the Congress will be devoted to the National Irrigation Act—its operation and possibilities—and leading irrigation experts and business men of the country will be in attendance and take part in the discussions. The American Forestry Association will meet with the National Irrigation Congress, and forestry will be given proper attention.

There is apparently need for more help in the Santa Clara prune region. It is announced by telegraph from San Jose that another thousand prune handlers are wanted. The crop is larger than estimates made earlier in the season and the growers are short of help. Unless there should be some relief afforded it is very probable that some of the crop will go to

waste. Reports on the peach and pear crop are also favorable. Shipments of these varieties are very large just now and the prices offered are inviting to orchardists. There is a good demand for dried fruit, and the dryers as well as the prune men are experiencing trouble in securing help.

The terms "locust" and "grasshopper" are continually bringing people into confusion. We read the following in a letter to the Healdsburg Tribune:

During my outing in the Maacama mountains, some miles north of Healdsburg and the fertile vine clad and orchard bearing valley of the Russian river, I noted with much interest the indications of the possible coming of a destructive element that may work some injury to vegetation of every class, not only in the locality mentioned, but also in the entire county. I refer to the locust-grasshopper, the ancient Egyptian scourge, memorable in sacred and profane history. I have noticed that the peculiar species are very numerous at the present time in this mountain range. The locust differs materially from the common grasshopper and is easily known. Its loud and distinctive chirping, which begins at sunset and continues through the entire night without cessation, after a time becomes very annoying. Whatever precautions were taken and means employed for their destruction in the interior counties of the State, if successful should be put into effect here.

The correspondent may refer to a cicada, which some call a "locust," and is famous for its shrill cry; but this is not the destructive locust or grasshopper. This devastating insect makes no cry and it does not differ materially from the common grasshopper, though there are fine marks by which the expert distinguishes the species which do most injury. The insect which annoyed the writer is very different, indeed, but is not much of a menace.

Stock growers will be interested in the statement credited to State Veterinarian C. H. Blemer that the Texas fever quarantine line may soon be moved southward. In a recent investigation he found that though there is more or less disease among cattle at this time of the year, he was agreeably surprised to find as little Texas fever, and fully believes that the effort that is being put forth by Fresno, Tulare, Kings and Kern counties to stamp out the disease will make it possible to change the quarantine line to a point south of Kern county in another year or so, and give this section access to northern trade.

QUERIES AND REPLIES.

After Effects of Pear Scab.

TO THE EDITOR:—I send a small box of pears to get your opinion of what is the trouble with them. I have picked out the worst affected, that you may see what the damage is. Last year we had brownish rings around the pears, which disfigured them, but this year it is even worse—all-shaped brown patches. If you have a remedy for the disease, I would very much like to know what it is.—READER, Anderson.

Examination of the defective pears shows that the unsightly brown patches and scars are due to the work of the scab earlier in the growth of the pear, and that the light brown, irregular-shaped spots represent the portion of the surface formerly affected by the scab, but subsequently healed and partly grown over, thus producing quite a different appearance from the scab which shows the fungus in active growth on the fruit. The preventive treatment, of course, will consist in spraying to prevent the occurrence of the scab in the first place, and that can be secured by a thorough winter treatment with lime, salt and sulphur wash or with the Bordeaux mixture. This winter treatment will destroy the spores resting upon the bark of the tree. The scab is likely to appear later, after growth commences, from spores newly introduced, and the spraying with the Bordeaux mixture while the fruit is small is then desirable. One pound of Paris green can be added to 200 gallons of this Bordeaux mixture, and it then becomes effective against both the codling moth and the scab.

New Wheats and Barleys.

TO THE EDITOR:—In the Year Book of the Department of Agriculture for 1900 (on page 138) I find this statement: "The introduction of the best white wheats from Australia, Japan, China and Europe is one of the best results which has recently been accomplished for California agriculture." The Department omits to tell the farmer where he can procure any of these wheats in this State. I would like very much to know if I can obtain a small quantity of seed of some of these wheats so I could try them on Union Island and to whom I must apply.

And I would also make a similar inquiry in respect to new barley seed and if there is here anything better than such as we generally use.—SUBSCRIBER, San Francisco.

We do not exactly know to what varieties reference is made in the sentence which you quote from the Year Book of 1900. All the wheats which we have seen from China, Japan and most of those from Europe are the hard dark wheats of the gluten type, some of which have been sent to the University so that they might be grown to determine how the California climate affects them. The results thus far indicate that they have a tendency to become whiter or more starchy. None of them that we have seen, however, are fit to compare with our best varieties of white wheats now largely grown. It might be desirable for you to write directly to Dr. Pieters of the Division of Seed and Plant Introduction, U. S. Department of Agriculture, Washington, D. C., and ask which varieties he has reference to in the sentence which you quote and whether he can furnish you seed for experiment. A certain number of barleys were introduced and were offered in the University seed distribution last year, but sufficient evidence to determine their value here has not yet been secured. Probably if you would like to try them the University could still supply a small amount of seed.

Vegetables on the Southern Coast.

TO THE EDITOR:—Will you please tell me what printed matter you have on vegetable growing in southern California, more particularly cucumbers and tomatoes, and give me result of experiments, if any, on protecting tomatoes from frosts similar to the method adopted in protecting fruit? Is there any injurious effect on tomatoes from the sea when raised along the coast—at Long Beach for instance?—NEW COMER, Long Beach, Los Angeles county.

The most successful local methods with the tomato and cucumber are described in our book on "California Vegetables." We are not aware that the methods employed by citrus fruit growers for protection of trees against frost have been applied to the protection of vegetables. They are being used in the central part of the State in protecting vineyards, and would probably be available for other crops if the value of the crop justified the expenditure. Protection of tender plants by a cloud of smoke, so that the rising sun does not strike them, has been shown to be successful in a number of cases. So far as we know there is no injury to cucumbers and tomatoes from proximity of the ocean in your part of the State where these influences are modified by the trend of the coast and by south latitude. Naturally crops would be late near the coast, but we are not aware that they are otherwise badly affected.

Deep Sowing and Grain Smut.

TO THE EDITOR:—Can you advise me the best method to handle barley, oats and wheat seed in order that I may plant deep (say 4½ inches) and take but small chances of the grain smutting? I have used bluestone, but still the grain comes smutty when I sow by plowing it under. Maybe I do not use bluestone strong enough.—A. E. STOKES, San Diego county.

We have no particular information on this point. Seed can be dipped in a saturated solution if cold water is used—that is some undissolved bluestone can be kept at the bottom of the vat to be stirred up as fresh water is added, but even a weaker solution should kill the smut spores. About the greater prevalence of smut on deep sown grain we know nothing. What have other growers observed in this connection?

Not Pear Blight.

TO THE EDITOR:—I am sending some twigs of Petit prune taken from an orchard that is surrounded by a pear orchard that is about dead with the blight. The trees in portions of the orchard have an appearance of having been swept with fire. The upper portion of the trees seems to be the most affected, although in many instances one-half of the tree is green and thrifty, while the other is dying. The orchard was irrigated once and cultivated, grows well each year, and only during the past few weeks has shown signs of the disease. The trees present the appearance of the pear in the first stages of the blight, though the leaves do not turn black.—ON-SERVER, Bakersfield.

It has not been determined that the bacterial blight of the pear attacks the prune. The samples which you send do not show the characteristic ap-

pearance of that blight, but rather seem to be a die-back caused by some trouble in the soil. Any cause which injures the root hairs, whether it be excessive drouth, or excessive moisture, or presence of alkali, will produce a die-back, and it even appears on trees which have been able to make a good growth during the early part of the season and coming into distress afterwards. The presumption would be that the trees have not received enough irrigation to carry them through the latter part of the dry season. We have seen many kinds of trees this year which have been accused of having pear blight, but are only being knocked out by die-back. Some pear trees are thus suffering, and the pear blight is credited with invasion of some districts to which it has not yet gained access.

Shasta County Walnuts.

TO THE EDITOR:—I send a sample of walnuts. Will you kindly inform me as to what variety they are, and also whether dipping or sulphuring is necessary, which is the better process, and whether it will materially increase the price of the nuts, that is, enough to make the operation pay? Should the nuts be picked before they drop, and, if so, should those having the outer husk uncracked be picked now or be allowed to remain on the trees until the husks do crack open?—MCCOY FITZGERALD, Clear Creek.

The nuts are good-sized, full-meated, medium-shelled—very satisfactory in every way. We are not sure of the variety, but apprehend they are seedlings. They have a very good color, naturally being about light enough without sulphuring or dipping. Washing in a revolving cylinder to remove particles of dirt will bring them into good marketable condition. Walnuts should generally fall of themselves and be picked from the ground at short intervals to prevent staining. Later in the season it may be necessary to help the slow ones down with light shaking or poling. If the trees are scant of soil moisture a late irrigation is used to help the nuts open, but where moisture is ample this is now held to be unnecessary by some growers.

Longevity of California Fruit Trees.

TO THE EDITOR:—How much longer can it be expected that French prune trees, now eighteen years old, in first-class condition, on first-class soil, about 3 or 4 miles west of San Jose, in the choice section of that county and now bearing first-class crops, will continue to bear undiminished crops, conceding that they have as good care as heretofore—how many years before the crops will commence to deteriorate in quality or quantity? The same question as to Moorpark apricots of same age on same land and under same conditions?—INQUIRER, San Francisco.

Fruit trees have not been grown long enough in California to determine accurately the limit of their profitable longevity. It is known that fruit trees on good soils and otherwise well circumstanced will be profitable for a much longer period than they are usually calculated to be at the East. There are numerous instances of trees planted forty years ago that are still profitable, although it would not do to count upon such age with the average situation and treatment. Our idea would be that trees you mention so well situated and cared for might be counted to be in their prime at the present time, and with the continued generous treatment and skillful care might be expected to double their present age before becoming superannuated.

Algerian Peas or Alfalfa.

TO THE EDITOR:—Can you give information on the Algerian pea as a cattle food, as I believe you have been experimenting with it? I have a friend who has 700 or 800 acres of good alfalfa land in Arizona and all the water he wants. He buys cattle, fattens and sells again. I heard the Algerian pea went twenty-eight tons per acre; if it is good for fattening cattle, it would mean a lot there. Will you please let me know of its value?—READER, San Francisco.

Our experience with peas from the Mediterranean region is that they make a good winter growth in the California valleys, and are, therefore, available for stock feeding at the time of the year when alfalfa is not making satisfactory growth. These peas, however, have to be sown every year, and will not be as available for feeding in the summer as alfalfa is, because they do not like the heat and drouth of that season. They are in no sense to be considered a substitute for alfalfa on land which will grow alfalfa well, but for a winter forage plant they may prove widely available as a supplement to alfalfa pasturage.

Is It Food or Medicine?

TO THE EDITOR:—Will you be kind enough to tell me what the compound extract of salyx is composed of, and whether in using it to put up fruit there is anything injurious in its composition? There has been a considerable amount sold around here for putting up fruit by what is called cold process—that is, without cooking.—SUBSCRIBER, Monterey county.

The so-called "compound extract of salyx" is supposed to be some preparation including salicylic acid which is a powerful antiseptic and preservative. It is pronounced by experts to be exceedingly undesirable in any food product and its employment is prohibited by some Boards of Health. Salicylic acid is described by physicians in definite doses for some human ailments and it should not be employed except as a medicine, intelligently prescribed.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 29, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Clear weather during the week was favorable for fruit drying and maturing late fruits and grapes. High northerly winds in some sections damaged fruit on the trees and drying fruit was slightly injured by sand and dust. The heavy fruit crop is being rapidly dried. Grape picking is progressing and heavy shipments are being made from Sacramento and other places. Large quantities of grapes are going to the wineries and wine making is progressing rapidly. The yield of grapes is very satisfactory. Citrus fruits continue thrifty. An excellent crop of hops has been harvested.

COAST AND BAY SECTIONS.

Warm and generally clear weather prevailed during the week and conditions were favorable for fruit drying and bean curing. Grape picking is progressing rapidly and heavy shipments are being made to market and wineries. In the Sonoma and Napa valleys the yield of grapes is reported the largest for several years and the quality is excellent; there is also a good crop in the Santa Clara valley and other sections. Wine making has commenced in many places. The prune crop is reported about the same as that of two years ago, and is being rapidly cured and packed. Bean picking and canning are progressing in Lake county and bean thrashing has commenced in the south. Corn is maturing rapidly.

SAN JOAQUIN VALLEY.

The continued cool weather during the week was somewhat unfavorable for the rapid curing of raisins and fruits, but considerable progress was made, and packing houses are now running night and day. Immense quantities of Sultana and other grapes are going to the wineries, which are taxed to the utmost to handle the crop. The grape and prune crops in Tulare county are reported the largest ever raised. Late peaches, pears and prunes are being disposed of as rapidly as possible. The fruit and grape crops are probably up to average in nearly all sections. There is a large crop of Egyptian corn in Tulare and Kern counties and picking has commenced. Plowing and seeding are progressing.

SOUTHERN CALIFORNIA.

Generally clear, warm weather prevailed during the week, with fogs along the coast. Fruit drying and raisin making are progressing favorably in most places. There is an excellent yield of grapes. Plums and late peaches are in market and apples are very plentiful. Walnut picking has commenced in Orange county and the crop is reported lighter than expected. Citrus fruits are doing well. A correspondent at Santa Maria states that the yield of beans will be larger than estimated and probably up to average. Bean harvesting and thrashing are progressing. Hay baling is completed.

EUREKA SUMMARY.—Humboldt apples probably two-thirds of a crop, but large and excellent quality. Late vegetables are making good growth. The soil is dry and pastures need rain.

LOS ANGELES SUMMARY.—Warm weather at close of the week was good for fruit drying. Irrigation continues; the water supply is decreasing in places.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, October 1, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall to Same Date Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.00	.37	4.29	1.68	64	44
Red Bluff.....	.00	.00	1.84	.85	90	52
Sacramento.....	.00	.7	.55	.43	84	50
San Francisco.....	.10	.7	.75	.41	82	52
Fresno.....	.00	.2	.59	.33	90	48
Independence.....	.00	.29	.42	.34	78	44
San Luis Obispo.....	.00	.7	.28	.45	94	42
Los Angeles.....	.00	.7	.12	.45	92	52
San Diego.....	.00	.90	.08	.14	73	56
Yuma.....	.00	.11	.22	.72	102	52

FORESTRY.

The Relation of Forestry to Agriculture.

NUMBER II.—CONCLUDED.

By MR. T. P. LUKENS of Pasadena at the University Farmers' Institute at San Bernardino.

It is no longer a disputed question that the depletion of forests causes the extremes of flood and drouth. Humid regions become arid, for proof of which we are no longer compelled to cite Palestine and other parts of the old world, but we see it clearly portrayed in our own country.

In the seven counties of southern California there is approximately 10,000 square miles of arable land, with a population of 305,000 and property with assessed value of \$160,000,000. There is an almost unbroken range of mountains from the coast in Santa Barbara county to San Diego that forms a barrier from the Mojave and Colorado deserts on the north and east. This mountain area of 4500 square miles has wisely been set aside as forest reserves, for on this rugged mountain range southern California depends for its supply of water for all purposes.

Many have indulged in the delusive theory that our subterranean supply of water, which now furnishes at least 90% of all the water used in southern California, from wells, artesian and otherwise, was supplied from distant sources; but, with the distant sources practically unchanged, we find our subterranean supply rapidly decreasing.

For centuries this great cistern has been filling from the portion of our rainfall that has fallen upon and been conserved by our local mountains. It is an emergency supply, and when exhausted cannot be replenished in a short time, for the process of saturation and percolation is slow, much slower than formerly, owing to the destruction by fire, stock grazing and cutting of the brush and trees. There can be no conservation of water in our mountains without covering, and the extent of our water supply depends on the density of the growth thereon.

HOW THE FORESTS WERE LOST.—So much is known of the early history: that the mountains were well forested, the valleys were well covered with oak trees, and the streams flowed continuously above ground. Until recent years sheep raising was the chief industry. They were herded in the mountains without restraint and, as is known to all observers, destruction and devastation are the result of sheep grazing in our mountains, especially in arid regions. For a while the sheep men annually burned their ranges to make accessible new areas, until now there is but a small portion of these mountains which has not been burned over. There are many other causes of fire, but they are due to the carelessness and indifference of men in nearly every case. Laws inflicting a heavy fine and punishment do not check the destruction perceptibly. Of all the fires that have started in our mountains, the aggregate of the fines that have been imposed for all the fires which have been started in these mountains is merely nominal. In the twelfth century, Germany became alarmed at the great number of fires, and to abate the evil a law was passed punishing any one wantonly setting fires to the forests. The punishment was this: The offender was bound hand and foot and drawn three times through the fire. Although this punishment was inflicted upon the offenders, the destruction continued until the forests were well guarded.

HOW CAN THEY BE RESTORED?—The question of protecting the small portion of forests still remaining and of rehabilitating the vast areas that have been denuded, can only be accomplished by the adoption of a rational forestry system. Why should our country, so enlightened and so far in advance of other nations in the mechanical arts and industries, be so lax and deficient in the management of its forests? Surely not for lack of skill and intelligence. We cannot concede that Germany, France and other nations that are not only realizing a direct profit from their forests, but have rebuilt agriculture to a profitable plane, without which no country can succeed, can do more than we. Their rivers have returned, and all the manifold blessings induced by forests.

When once the management of our forests is placed, to remain, in the hands of our skilled foresters, backed up with liberal appropriations and unhampered by political parties, then the wanton waste and destruction will be reduced to the minimum, and our forests being rehabilitated with all blessings, will soon become self-supporting. There is abundant proof that the mountains of southern California were once heavily timbered. Fully 80% of all the area is now covered with brush, but for the most part sparsely. This brush, naturally very inflammable, when heated by a few weeks of constant sunshine, becomes as tinder, and a fire once started is most difficult to control; in fact it cannot be until fire brakes are made by removing the brush along the ridges. The handful of men employed as rangers, one man to 37,000 acres of steep, rugged mountains, is entirely inadequate, although they have accom-

plished a great deal in watching careless persons, and in putting out small fires.

While the brush is valuable as a water conserving, a tree covering is much more desirable, inasmuch as the soil under trees is cooler and moister than under brush. The roots of the trees are larger and penetrate to a greater depth, and the surface receives more humus to form a mulch to retain the water and prevent evaporation. As fast as the brush is burned, there should be planted the seed of indigenous trees. An area forested exclusively with trees has also the advantage of being less susceptible to fire. What to plant and how to plant must be governed by local conditions. Within the boundaries of 46,000,000 acres of forest reserves, the structural and climatic conditions vary greatly. I have the most profound respect for nature—she has made no mistake in planting trees, all being suited to the conditions surrounding them. While it is possible some foreign trees will thrive for awhile, it is not safe to plant other than indigenous trees except in an experimental way.

The forested area of southern California is about equal to that of Prussia, where, under Government control, the annual net profit of \$1.50 per acre is realized, besides the incalculable indirect benefit of equalizing stream flow, etc. In the Grand Duchy of Baden, the annual net direct profit is \$2.60 per acre, 10 cents an acre annual net profit more than our Government received for the redwood forests. One average redwood tree from the California forest will yield more timber than any acre of forest in Prussia. With all these facts in sight, our Government should withdraw from sale every acre of timber land unsold; and, cared for by the Bureau of Forestry and the trees milled as they mature, the profits would go toward the rebuilding of our devastated areas.

THEN AND NOW.—We have some most striking comparisons, showing the value of forests covering for the conservation of water. The San Gabriel river basin watershed, with an area of about 223 square miles, delivered 90 miner's inches during the dry months of 1900, while the San Antonio, about 23 square miles, produced 190 miner's inches at the minimum. These basins are contiguous in the same range. There is the same precipitation in each, but the San Gabriel has been repeatedly burned, until much of the area is nearly bare, and consequently the water conserving power is seriously impaired. The San Antonio basin has been burned but little, and the covering in most part is intact.

Bear valley, in the San Bernardino reserves, contained in 1860 two large lakes, each covering more than a section, and about 5000 acres of rich meadow. Late in the sixties sheep were driven into the valley, and during several of the first years of herding, at least 30,000 sheep were pastured there. Later the feed became scanty and the number was decreased until at the end of twenty years of grazing the number was reduced to 2000, and the food was poor for that number. There were formerly large streams which not only kept the lakes full, but discharged through the summers large volumes of water. Now the lakes are dry and the streams have so diminished that during five months of the year the streams do not reach the outlet of Bear valley dam. The slopes of the mountains forming the watershed of Bear valley, once so rich in tree and bunch grass covering, are nearly bare. Natural reforestation as conifers matured and died was precluded by the sheep, since they eat all little conifers as they showed themselves above ground.

The total assessed value of all the sheep and cattle in the seven counties of southern California is \$1,200,000, while the assessed value of property dependent on the water conserved in our reserves is \$160,000,000. It is clearly seen which is the paramount interest and that all stock should be kept out of our mountains.

People with homes in the reserves are a help in keeping down fires, but the people who go in for a frolic should be under watchful restraint, if permitted to go at all.

A sad sight is to see a deforested area in our semi-arid country, where a tree is so valuable as a water conserving. It is a desolate picture. The same crop could be harvested by the forester and his trained assistants more profitably by cutting only mature trees and effectually disposing of the lopings, without destroying the well-mulched surface which is so essential to new growth.

When forest trees are removed, if man will assist, just a little reforestation will be speedy and complete, for the surface is rich. But after repeated fires it is more difficult. The soil that has been building for one or two hundred years is nearly or quite gone and the rains run off rapidly, while the sun and wind dry up the surface.

The plan to build storage reservoirs, as advocated by the National Irrigation Association, is most commendable and should receive the support of every friend of forestry. At the same time let us put our natural reservoirs in repair. The rainfall on our mountains will average 48 inches annually, and if our mountains are well clothed, at least one-half will be retained by percolation. With our 4500 square miles of watershed in southern California, we would have 2,800,000 acre-feet of water for irrigation. Then would our country be productive and bloom as the rose, and

be capable of sustaining a greater population than the same area of any other part of the world. So the only hope for future development is to retain the forests.

THE KNOB CONE PINE.—It is an easy problem to perpetuate a forest. When a tree is removed, plant another. All conditions are favorable then, but after repeated fires over the length and breadth of the mountains, the conditions are not so favorable for tree growth. Nature in her wisdom has seemed to provide for such emergency. Here and there, from San Bernardino to Shasta, we find growing on fire-swept slopes that vigorous and invincible tree, the *Pinus Tuberculata* or *Attenuata*. But few travelers ever see it, and of those that do but few take notice of it, only for its strange appearance which its life store of cones give it. The tree is usually small, early bearing, slender trees on sunny slopes of the Cascade range to the northern Sierra and southward, rarely on the coast ranges, to the San Bernardino mountains. Cones in circles, strongly inclined, narrow and pointed, 3 to 8 inches long, remain on the tree unopened for an indefinite number of years; the outer scales with conical quadrangular tubercles, terminated by a very short, deltoid, firm prickle; leaves in threes, 3 to 7 inches long; sometimes called Knob Cone or Hickory Pine. A peculiarity of this tree is the tapering character of its cones at the base, whereby they oppose so little resistance to the growing trunk that the annual layers, instead of crowding off the cones (as in most other species), often envelop them completely. They are found in large trunks still unopened and the seed good.

The cones are borne in whorls first around the main axis of the tree only. As the tree grows and branches freely, which it will do where not crowded, then cones are borne about the limbs. I have counted as high as 500 cones on a tree fifty years old, each cone containing 124 fertile seeds, which are small, there being 20,000 to the pound. The seeds have a wing 1 inch long and $\frac{1}{4}$ inch wide. When a fire sweeps through a grove, if severe, it kills the tree. The heat melts the resin with which the cone is sealed, and the second or third day after the fire the winged seeds take flight and plant a far greater area than existed before. Thus, after each fire the forest becomes dense, crowding together for protection, until at last they defy the fire, for where they grow so closely together as to occupy all the ground they will resist fire. This persistence of cone, coupled with the firm coherence of their scales for an indefinite length of time, is an important fact, for it insures better propagation, if not the very existence of the species. It is found that the seeds in these long closed cones are always in good condition, however old the cones. They seem to declare not only that this species of tree shall be its own survivor, but also that it may extend its domain over other territory thus cleared of trees which have departed, leaving no sign.

So we may expect that through the improvident or wanton conduct of man, while it destroys by fire the noble sugar and yellow pine of our vast forests, this cunning little provident tree, fighting now for room to stand upon, and crowding close together for greater strength, shall, after long waiting and at last fire-killed, unlock its store of life germs, and scatter them with sailing wings on the wind to reforest the mountains. No tree shows more greenness or symmetry of growth than they when not crowded.

Their desire seems to be to cover the ground, if not in numbers, then with wide spreading branches. Trees are to be found 150 feet high with a body 2 to 3 feet in diameter. I have never found one of them dying from old age. They thrive where other trees would not attempt to grow, on the steep, hot, rocky slopes. Their roots penetrate every little crevice to an incredible depth, opening channels for the conservation of water, and mulching the surface with their foliage.

The enclosure of the cones in the body of the tree precludes their use for timber, as the cones are too hard to be sawed, thus increasing their insurance of life. For, if it were a good lumber tree, when grown, some one with a gold bug in his eye would devise a way to remove it. Their usefulness consists entirely in their value as a water conserving, and to prevent erosion. The more humid region of northern California, Oregon and Washington, so rich in forests, will, if rationally harvested, perpetually supply the coast with lumber. Even the higher portions of our southern mountains produce much good lumber, and harvested by trained foresters in a rational manner, could be made to yield a profit and perpetuate the forest. But the slaughter practiced now of the forests on the San Bernardino and San Jacinto reserves is sure to result in serious loss, not only to the immediate depletion of the water supply, but by reason of the lopings (which consist of at least one-half of the tree bulk) being left to dry and be burned, and the soil that has been hundreds of years accumulating is consumed. The rains carry the silt on the valley lands, and the summer streams vanish. This provident pine tree if helped a little by man will in time cover all our mountain slopes, store our rainfall, and defy the fiery elements.

WHAT CAN BE DONE?—I am asked, how can the

farmers and fruit growers aid in the restoration of our water supply? I would say:

First—By petitioning the department in charge of our reserves to thoroughly guard against fire, and to tender your Forest Supervisor your hearty co-operation in preventing and extinguishing fires.

Second—To petition that all stock grazing be prohibited in the reserves, and when these common destroyers are cared for, insist on the replanting of all the deforested areas.

THE BOTANIST.

Identification of Various Plants.

By MR. H. M. HALL, Department of Botany, University of California.

MORNING GLORY IN A CLOVER LAWN.

TO THE EDITOR:—A weed, different from anything I have heretofore noticed in this vicinity, is giving me considerable trouble in my white clover lawn. Under separate cover by this mail I am sending you a few samples; will you be good enough to advise me what it is and what can best be done to eradicate it?—AMATEUR, Hueneme.

The plant is common "bind weed" (*Convolvulus arvensis*). It is from Europe and one of the most troublesome of introduced weeds. It is difficult to eradicate. If in a young lawn, remove by hand as fast as they appear. This can best be done by aid of a spud—an implement something like a chisel attached to a long handle—and must be persistently followed up so that the root may receive no encouragement from the leaves. But if well established the simplest remedy is to plow the land and start afresh. Either remove all the roots by careful raking, or practice continued cultivation until all roots are killed. Care should be exercised in the selection of grass seed for lawns and it should be subjected to examination by a seed expert for impurities.

LION'S EAR.

TO THE EDITOR:—To decide a difference of opinion would you kindly classify the inclosed specimen. There are from three to five whorls on each stem. The bush is six feet high.—READER, Eureka.

The plant is *Leonotis leonurus*, "lion's ear." It is a native of South Africa.

ANOTHER WEED IN GRASS SEED.

TO THE EDITOR:—I inclose a specimen of plant which one of my customers brought to me, claiming that it comes from grass seed which he bought of me last winter. I sold him at that time English rye grass, Italian rye grass, timothy, orchard grass and alfalfa seed, which he mixed up and sowed on a low damp piece of pasture land. The plants I send from this sowing grow about from 12 inches to 16 inches high and sprangle. He tells me that it is a new plant in these parts.—SEED DEALER, Sonoma county.

Your customer is mistaken for the plant is a native weed called "loose strife," having the botanical name *Lythrum Californicum*. It is common in middle and southern California. We have received it from Newark, Suisun, etc. It is an inhabitant of low, moist land, a native of California and not usually considered as being an exceedingly troublesome weed, although it may rapidly become a nuisance on lands suited to its growth.

AN IMPORTED SOLANUM.

TO THE EDITOR:—I send leaf and fruit from a tree growing on my place in Mill Valley, Marin county. It is of Mexican origin and I am trying to determine what it is and if the fruit is edible or good for anything. I have tried several parties and no one seems to know what it is. If you can give me its name and description you will greatly oblige me.—SUBURBAN, San Francisco.

The name of this tree is *Solanum verbascifolium*, one of the tree solanums, belonging to the solanaceæ or nightshade family. It is a native of East and West Indies, Mexico, South America and Australia. There is no recorded use of plant, except that Prof. Maiden, Governmental Botanist of New South Wales, Australia, reports that the wood is sometimes used, and that it is of a yellow color, easily worked, of a close, light grain. Leaves, green fruit, etc., of related species contain solanum, a poisonous alkaloid, which is absent in ripe fruits. The berries are too rich in seeds and too lacking in pulp to be of value as a food.

TWO THISTLES.

TO THE EDITOR:—I send a sample of thistles which I find growing in vacant places in Dixon. Please let me know what kind these are.—FARMER, Dixon.

The specimens with yellow flowers and entire leaves

are yellow star thistles (*Centaurea solstitialis*). The purple-flowered specimens with cleft or lobed leaves are purple star thistles (*Centaurea calcitrapa*). Both are weeds introduced from Europe, the former being much more common and troublesome. The only method of eradication, so far as I know, is persistent hoeing when young or the cultivation of hoed crops.

WEEDS IN ALFALFA.

TO THE EDITOR:—I recently purchased some alfalfa seed, planted same and with it came large quantities of the weed, samples of which I inclose you. Can you tell me what they are and if they have food value?—GROWER, Lodi.

The specimens sent were poor, but we have been able to identify the following: *Amaranthus retroflexus*, "rough pigweed"—This plant is of no value for feed and a nuisance as a weed. *Panicum sanguinale*, "crab grass"—Inflorescence of loose, slender spikes 4 to 5 inches long, growing in whorls from near the ends of the stems. It is a well-known annual, common in nearly all parts of the United States, growing in cultivated fields and about dwellings. It is a weed in gardens and among hoed crops. In grain fields after harvest it frequently springs up in such quantity, particularly in the Southern States, as to yield one or even two good cuttings of hay. This spontaneous growth affords excellent pasturage, as well as hay of first quality if properly cured. The stems are much branched and in good soil attain a length of 3 or 4 feet. This grass contains little fiber and dries quickly when cut, but if after cutting it is wet by rains or heavy dews its value for hay is almost wholly destroyed. In Bohemia, crab grass is cultivated upon sandy soils and the grain is used for food in the form of mush or porridge. *Panicum Crus-Galli*, "barnyard grass"—This grass is much relished by stock, either as a green feed or as hay, but difficult to dry. Neither of these grasses are desirable in alfalfa.

HORTICULTURE.

California Fruits at the East.

TO THE EDITOR:—You may be interested in hearing something about retail prices of California fruits here in the East at the present time (Sept. 16th to 21st). In Montreal, Boston, New York and Philadelphia I have found a great abundance of fine California fruit, principally Bartlett pears, retailing at 40 cents a dozen or three for 10 cents in the fruit stores and on the street stands, and evidently finding ready buyers. Canadian and Eastern States "Bartletts" are retailing at 20 cents per dozen, and are—this year—very poor in size, appearance and flavor as compared with ours; I sampled both for comparison. There is an apparent difference in shape between the so-called Eastern Bartlett and ours, and they may be different things, but they are both sold as Bartletts. Smaller California Bartletts, and bruised fruit, retails at 30 cents and 20 cents per dozen, according to size, but in any case our fruit looks better than the native, perhaps because there has been so little sun to ripen Eastern crops this year. The only brand of Bartletts of which I saw the labels were those of Geo. D. Kellogg of Newcastle; they were at Montreal.

GRAPES.—Eastern grapes are very late and very poor and sour this year for lack of sunshine; Concord's look well, but even the blackest are very sour. Around Buffalo and Rochester they are said to be rotting instead of ripening. Hartley's Vacaville Tokays retail at 60 cents a basket and have travelled in excellent shape.

PEACHES.—Niagara township peaches have a splendid color and retail in Toronto and Montreal at 50 cents a basket (one of those oblong baskets of chips with a handle above). They were being eagerly bought up and carried home by visitors from northern and eastern Canada attending the Toronto Exposition. By the way, the exhibits of fruits and farm produce, including live stock, at this Exposition were very good, and the attendance was over 400,000 for the two weeks; people came from all over the Dominion, including British Columbia, Alberta and Assiniboia. Hereafter the Exposition is to be a Dominion affair and to be held annually at Toronto. Among other things there was a fine exhibit of West Indian agricultural products.

PEACHES AGAIN.—In Montreal quantities of California late peaches were being offered at \$1.25 a box (retail) in competition with Ontario and Eastern States peaches at 50 cents a basket, and our fruit seemed in good demand and looked well. They retail in smaller lots at 40 cents to 20 cents a dozen, according to size and quality.

George's Late Clings, grown by J. L. Nagle of

Newcastle, and Salways from J. S. Correa, Jr., and W. J. Wilson & Son of Newcastle, were the only brands of which I saw the labels.

BANANAS.—The finest "Jamaica" or "Martinique" bananas retail at 10 cents to 15 cents per dozen and are superior in flavor to the average obtainable in San Francisco; the "Jamaica" is the product of a different species from that usually grown in the Hawaiian Islands; the latter is the dwarf Chinese, *Musa Cavendishii*, the Jamaica is *M. paradisaica*. There is a tendency in the West Indies to grow more of the dwarf Chinese on account of its better shipping quality, but I fear it will result in poorer quality.

Jamaica oranges—the first of the season—are now on the market, and retail at 20 cents per dozen; they are very pale in color and are said to be still very sour.

JOS. BURTT DAVY.

Washington, D. C.

THE FIELD.

Lima Bean Growing in California.

The Crop Reporter of the Department of Agriculture says: While the Lima bean is grown in vegetable gardens for local or home use in nearly every State in the Union, its culture on an extensive scale as a commercial product is confined to California. In Ventura county, in the southwestern portion of the State, and in counties adjacent thereto, on the Pacific coast, between 40,000 and 45,000 acres are devoted to the Lima bean industry.

The acreage is much smaller than in former years, due to extremely low prices prevailing prior to 1900, to three seasons of drought, resulting in crop failure except on irrigated lands, and to the growing of sugar beets on large areas formerly devoted to beans.

The Lima, which is a pole bean in other sections of the United States, is grown without poles or other support in the California "bean belt." The vines pile themselves along the rows and bloom and pod profusely unless checked by drought. The beans ripen during September. Those grown farthest from the sea ripen first and cure more quickly when cut than those grown nearer the coast.

The crop is harvested by means of sleds with knives attached to the runners and drawn by horses, or by the more modern wheel cutters. In from two to four weeks after cutting the beans, having cured, are threshed, either by steam threshing outfits which move from field to field, or by the method known as "tramping," which separates the beans by means of horses and carts or other vehicles drawn over the vines previously piled on earthen floors, the straw being constantly turned and moved with pitchforks. The latter method, while slower than the former, is said to be not more expensive if the weather is dry.

The average cost of production is in the neighborhood of \$2.25 per cental. When properly cultivated, from 1200 to 1500 pounds can be produced per acre on good land in favorable seasons. In the best localities as high as 2000 pounds per acre have been grown. The prices realized by the growers fluctuate considerably. The crops of last and the present season will probably average \$4 per cental, yielding handsome profits.

Accurate statistics of production are not obtainable, but the estimated yield last season was 550,000 sacks of eighty pounds, and it is believed that this year's production will equal, if it does not exceed, that of last year.

Eastern Potato Conditions.

The Government Crop Reporter says that the average condition of potatoes on Sept. 1 was 89.1, against 94.8 on Sept. 1, 1902, 52.2 on Sept. 1, 1901, 80.0 at the corresponding date in 1900, and 74.6, the mean of the September averages of the last ten years. In every State having 100,000 acres or upwards in potatoes, except Illinois, there was an impairment of condition during August, the decline being 3 points in Pennsylvania, Iowa, Ohio and Minnesota, 4 in Wisconsin, 10 in Michigan and 18 in New York, while the condition in Illinois is exactly the same as it was a month ago. Every important State, except New York, shows a condition considerably higher than the ten-year average. In Michigan the present condition is 3 points above such average, Pennsylvania 14, Minnesota 20, Wisconsin 21, Ohio 25, Illinois 29 and Iowa 20, while in New York the condition is 5 points below such average.

There was a decline in the condition of sweet potatoes during August amounting to 1 point in Alabama, 2 in New Jersey, Virginia and Georgia, 4 in Tennessee and 12 in Texas. On the other hand, 5 of the principal States still show a condition equal to or above that of a month ago. In all of the principal sweet potato-producing States, except New Jersey, Virginia and South Carolina, present conditions are from 3 to 33 points below their ten-year averages.

THE management of the California State Fair invited Prof. Carlyle, who judged the stock at that show this year, to write it a letter of recommendations relative to the conduct of future fairs.

THE STOCK YARD.

Winners at the State Fair.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

There were some brilliant winners in the cattle contests at the California State Fair. Herewith we give some pictures and facts connected with some of these, their owners, and the herds which those owners have built or are building up. They were not the only winners, of course, but they are typical specimens, which give some idea of the direction in which the tide of cattle production is setting in California. Alfalfa acreage is increasing rapidly in this State, and we take it that it will not be long until the raising of thoroughbred cattle and horses, and even other stock, will be one of the leading industries of California, giving greater stability and prosperity than ever before.

The Howard Shorthorns.

The winnings of Hopeful 57th, two years old, registered Shorthorn cow, at the State Fair, as set forth last

Robert Ashburner, was highly commended by Prof. Carlyle, who expressed the opinion that a class in the State Fair premium list should be created for cattle bred for both beef and milk, and he thought that in such a class Mr. Ashburner's herd would stand very high.

California Pastoral & Agricultural Co.'s Shorthorns.

Of the many fine animals which attracted attention from lovers of blooded cattle who have visited the Fair this year, none has been more admired than Davenport Duke, the head of the fine herd of twenty-nine Shorthorns belonging to the California Pastoral & Agricultural Co. of Chowchilla Stock Farm, near Merced. All these pure-blood animals are of the Bates, Booth and Cruikshank breeds. Davenport Duke is a blue ribbon animal, four years old, weighs 2400 pounds, and has won the first prize for bulls of his class and second prize in the open class. The rest of the herd lined up well, many of them being awarded State and open class prizes. Prof. Carlyle stated, says Mr. Bird, that they were the best type of

Jose. The Pierce Land & Stock Co., Stockton, the president of which is Charles D. Pierce, also president of Pierce & Co., and residence at the Palace Hotel, and the vice-president, W. Frank Pierce, president of the Standard Electric Co. of San Francisco, breeds Holsteins. They have reason to be proud of the success which has attended their efforts in this direction. Their "Fidessa," "De Natsey Baker" and others were among the most brilliant winners of the late State Fair. There is no doubt good reason for this in the principles which have governed their business conduct of this line of enterprise. They began by selecting the best trained men they could find, P. Krog, superintendent, whose father was one of the largest importers and breeders of Holstein cattle in Denmark, who is a graduate of the Agricultural College of Denmark; they bought the best cattle they could find as a foundation herd; gave them the very best care, believing that a naturally good animal may be made or unmade in the handling; among other things they have just built a \$10,000 milking barn, as nearly ideal probably as it is possible to make one, \$5000 calf barn and their range is 600 acres on Rough and Ready Island, one of the richest pieces of land in San Joaquin county; they keep the most complete record of the character and quantity of the product of every milch animal, judging of the value from its record, and rapidly discarding any that do not prove their value, as well as discarding from the thoroughbred

purposes a cow is worth just according to her production, no more, no matter what her breeding. They believe that the true test of dairy cows is their milk and butter records, and that a thirty-day test is better than a seven-day one. They, therefore, were among the first on this coast to commence testing their cows as to production by the dairy department of the State Agricultural College. The result gave to "Fidessa" and "De Natsey Baker," whose pictures are shown elsewhere, the world's thirty-day butter records for each in her class, the first being a four-year-old and the other a two-year-old. The awards they gained at the State Fair prove them as fine in form as in production. In deciding, Prof. Carlyle said of "Fidessa": "She is in many ways an ideal Holstein cow." The Pierce L. & S. Co. have four bulls and 200 cows, all thoroughbred Holsteins, from which they are breeding. They sell only the best of their registered young bulls at present. In prizes at the State Fair their herd there took two grand and one ordinary sweepstakes, seven first and four second premiums against many competitors in all classes, these winnings being more than their competitors combined. Thus it will be seen that this herd has not only proven itself to take first place as regards advanced registry tests, but has proven itself the leading herd of the State in the show ring.

S. P. Lindgren & Sons' Hogs.

We are fortunate in having a group



"HOPEFUL 57th" of estate of Wm. H. Howard Shorthorns; winner of first for two-year-olds, open class; sweepstakes for best two-year-old any beef breed, and sweepstakes best cow of any age in Shorthorns.

week, combined with the winnings otherwise credited to the estate of William H. Howard herd, is evidence not alone of her individual excellence, but of the value and correctness of the breeding of the whole herd.

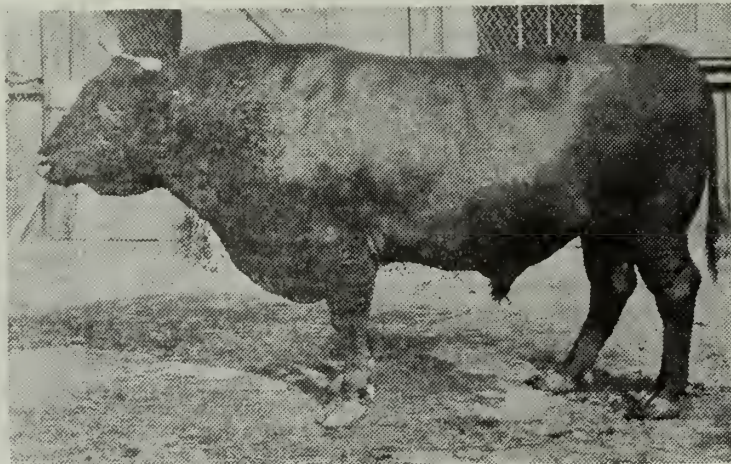
The foundation of the herd—now located on a 50,000-acre range west of Newman, in the San Joaquin valley, with business office at 206 Sansome street, San Francisco—was the now well-remembered Howard dairy herd of Shorthorns at San Mateo, bred from the best English sources, into which Scotch Shorthorn bulls were introduced on the discontinuance of the dairy and the beginning of the devotion of the herd to the breeding of beef cattle. In this way it came that the herd now contains the best of both strains, and the result at the Fair, with judging that was admitted by all to be expert, shows that no mistake was made in that case in the topping of the English (dairy) Shorthorns with Scotch bulls for the production of beef cattle. The best English strains, out of which the herd was originally established, have beautiful form and finish. The Scotch bulls are thick-fleshed, and the resulting get are cattle of excellent form and thick meat that mature quickly, especially under California conditions, and are best for the farmer who wants to raise beef cattle for the market to advantage.

The pictures show two animals from this herd, Hopeful 57th, to whom allusion has already been made, and King Spicy, the Scotch-topped two-year-old bull, son of Hopeful 57th.

Cattle for Beef and Milk.

The dairy herd of Shorthorns from the Baden Stock Farm, at Lakeville, Sonoma county, shown by the owner,

beef Shorthorns on the ground, but that they were not in "pink" enough condition to receive the highest honors. Mr. I. Bird, manager of the farm, who has been a cattleman for over twenty



"DAVENPORT DUKE," head of the California Pastoral & Agricultural Co.'s herd of Shorthorns.

years, paying particular attention to the Shorthorn breed, extends a cordial invitation to all fanciers of blooded cattle to pay him a visit.

The Pierce Holstein-Friesians.

Good thoroughbred cattle and the Pierce name seem to go together in this State, with the result of some confusion as to the identity of the Pierces, who are not at all related. Henry Pierce of San Francisco breeds chiefly Jerseys, and owns the well-known Yerba Buena herd located near San

herd in general into their grade herd any thoroughbreds which are not up to type, thus bringing about a survival of the fittest individuals in the finest strains, they, believing with Prof. Carlyle, that it is not only desirable to secure the best breeds for certain purposes, but equally so to gain the best individuals in the breed and perpetuate them. Men naturally feel a public debt of appreciativeness to men who work with such clear ideas and complete methods. The Pierce Land & Stock Co. think that for dairy or creamery



Prize-winning Poland-Chinas of S. P. Lindgren & Sons, Kingsburg, Fresno county.

of hogs from this excellent Poland China herd. The boar in the picture is "O. K. I Know." The sow above the boar is "Prize Tecumseh"—first prize yearling sow. The one behind the boar is "Black Hawk Pet," and the one above her "Black Hawk Queen." Both were in the sweepstakes herd bred by the exhibitor. The boar was imported from Missouri, but the four sows were bred by Lindgren & Sons, and they consider them better than they can ship from the East. For this reason they raise their own prize winners, and have sold pigs to several of the leading breeders of California. They are offering for sale fifteen sows bred to good boars of same breeding as the show herd. "Tecumseh Perfection" is their leading stock boar. He is claimed to have sired more prize winners than any boar in California. One of his pigs that won first was complimented by Prof. Carlyle as being the most perfect Poland China boar he ever judged. Lindgren & Sons are the originators of the Black Hawk strain that created such a sensation this year.

Sessions' Gold Medal Display.

As usual where Sessions & Co. show swine the awards ran considerably toward them; more so really than shows in the list of awards, since some of the stock which gained prizes for other owners came from their band, by purchase or breeding. This is due to the keen business judgment which for fifteen years or more Mr. Sessions has

shown in purchasing and in caring for his stock. In the latter, like some others of our California breeders of fine stock, Mr. Sessions shows that supreme qualification of business men, the ability to pick out good assistants and keep them; and since the care of stock is a large part of the struggle for superiority, that is important. Mr. Sessions' purchases in August this year at the sale of A. J. Lovejoy & Son, at Roscoe, Ill., were not least among his prize-getters at Sacramento, evidencing his good judgment in purchasing. They were "Sally Lee 18th," "Queen Perfection 2d," and "Hayter Lass 42d." The awards gained with these and other thoroughbred swine in the Berkshire and Poland-China classes were sharply contested, making the awards all the more valuable. We regret that at this time it is not possible to give the pictures of some of Sessions & Co.'s notable winners. What is more important, however, the special gold medal for the best exhibit of livestock of superior merit, unusual excellence and especial value in illustrating correctness of type and adaptability to special purposes, was awarded to Sessions & Co. of Los Angeles on their exhibit of Poland-China and Berkshire hogs. They showed thirty pens of hogs, in some of which were three or four porkers. In former years three special gold medals were given for best exhibits of livestock, but this year the number was reduced to one. Sessions & Company, with their big swine exhibit, bore away the palm.

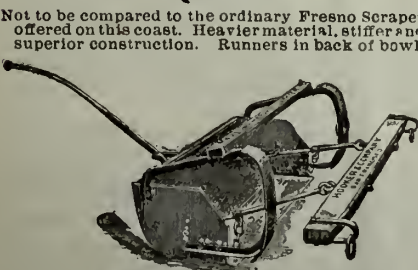
Ohio Improved Chester Whites.

The kind of hog it is most profitable to the farmer to raise must always depend largely upon the circumstances in which it is to be raised and the wishes of the buyers for market. It is well settled at present that dealers prefer and will give more for a hog that will weigh from 250 to 300 pounds than for a larger one, and to the smaller farmer the question is how to get such a hog in the shortest time with the least expense. There is a type of hog being introduced into this State from Ohio which seems to meet this requirement of good looks and quick development. In addition it is claimed that it is unusually free from liability to attack by cholera, and is preferable in that way. Since this has become known, the demand for them naturally has much increased. The breed referred to here is the O. I. C., or Ohio Improved Chester White, of which some fine specimens were shown at the State Fair by A. Gordon, of Hueneme, Ventura county. They are a well-shaped, symmetrical, fine-meated hog, will make 250 to 300 pounds weight at six months, are said to bring a superior price from Chicago buyers, and are worthy the attention of farmers who wish to raise hogs on alfalfa or close ranges.

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

Not to be compared to the ordinary Fresno Scraper offered on this coast. Heavier material, stiffer and superior construction. Runners in back of bowl.



"Fresno" Improved Scraper.
3 1/2-foot, 4-foot and 5-foot.
Send for Catalogue.

HOOKER & CO., SAN FRANCISCO.

Agricultural Review.

BUTTE.

THE NOBLE HORSE AS A WATCH DOG.—Gridley Herald: Last Monday night chicken thieves attempted to raid the hen roost of a Gridley citizen, and had it not been for the wonderful intelligence and faithfulness of a horse which occupies the corral in which the chicken house is located they would doubtless have gotten away with many of the fowls. During the night the citizen was awakened by a racket in the hen yard, and on taking a cautious look saw in the dim light a party coming out of the hen house with a sack. At about that time the horse with a vicious squeal went toward the man and wheeling her hind parts to him began kicking at him. The thief dropped his bag and ran, with the horse after him, the faithful animal actually getting a mouthful of the man's coat as he went over the fence. The bag contained eight chickens.

FRESNO.

DRIED PEACHES.—Republican: Horticultural Commissioner Weaver says: "The peach season is pretty well over—only the Salways and White Heaths being handled now. Prunes are just beginning, a few early-dropping having been handled. Pomegranates are just coming in. The peach market is much firmer than earlier in the season, and those who have held their dryings will now realize 5 cents for good goods. The crop is pretty well taken up all over the State. The co-operate peach growers in this county will realize 5 cents for their peaches."

ROEDING'S FIG SHIPMENT.—Democrat: According to a dispatch received by George C. Roeding his experimental shipment of fresh Calimyrna figs to New York City via Wells-Fargo Express, was not so successful as the one sent to Chicago a few weeks ago. Two cases were in good condition on arrival in New York, but the others were moulded. It is thought that the figs were not properly cared for en route, as it requires only twenty-four hours longer to ship from here to New York than to Chicago. Perhaps they were not iced when they should have been. However, the figs were a trifle too ripe, and greener ones would probably have gone through in good condition.

PRODUCTS OF A REEDLEY RANCH.—R. F. Jack exhibits a bunch of samples of the products growing on his ranch near Reedley. In the bunch are chestnuts, persimmons, pomegranates, almonds, walnuts, oranges, lemons and Japanese dates, all on the branches, making a very interesting collection. The dates, persimmons and chestnuts are very fine.

GLENN.

A LARGE BUNCH OF GRAPES.—Willows Journal: Gus Henning brought a record-breaking bunch of grapes into the office this afternoon. The grapes were taken from Mr. Henning's place east of town and the one bunch weighed a fraction less than seven pounds.

KINGS.

SHEEP THIEF TO BE TRIED.—Thomas Morgan had his preliminary examination Monday before Justice Randall, he being charged with grand larceny. He was bound over under \$1000 bonds to appear before the Superior Court, and in default he was remanded to the county jail. Morgan is charged with stealing a band of sheep from C. J. Hobler over a year ago. He evaded the officers and went into the southern part of the State, where he again got into trouble. He was arrested and tried, and sent to San Quentin for one year. While in prison Sheriff Buckner learned of his whereabouts, and when his time expired he (Sheriff Buckner) went to the prison and arrested him and brought him to Hanford for trial. Morgan has served two terms already in the State prison.

LOS ANGELES.

FRUIT PROSPECTS.—Monrovia Messenger: A drive through the orange orchards of Monrovia, Duarte and neighboring districts, and interviews with many growers, confirm the belief that the orange crop for the coming season will somewhat exceed that of last season. Generally speaking, the number of oranges per tree is less than it was last year, but the fruit is much larger and finer. The Navel ends are closed and smooth, and there will be little loss from rot caused by splits. There is less scale and less dirty fruit. Fumigation under the supervision of W. H. Payne has brought very satisfactory results, and there is hope of entirely freeing this district from the scale pest.

ORANGE.

GOOD YIELD OF POTATOES.—Santa Ana Blade: Fred B. Mills has just gathered 551 sacks of early Burbank potatoes from a patch containing a little less than

three acres of ground. This yield was gathered from plowing the furrows and when the rows are hoed out the yield will be increased by several sacks.

SACRAMENTO.

PRICES FOR GRAPES.—Record-Union: The Elk Grove Wine Grape Growers' Association sold to J. L. Da Rosa of Elk Grove 1600 tons of grapes at the following prices: Twenty dollars a ton for blacks, \$15 a ton for Muscats, \$12 a ton for Tokays. There were bids from wine makers in several other places, including Sacramento and San Francisco. E. W. Springstead, secretary of the Elk Grove Wine Grape Growers' Association, says these are the best prices realized this year in this part of the county.

HOPS GO UP IN SMOKE.—Bee: Loose hops amounting to 150 bales caught fire at the Merkeley hop house, down the river, about 10 o'clock last night, and quickly went up in smoke, entailing a loss of \$7500. The hops were the property of A. A. and Robert Merkeley. Luckily, about 200 bales of the hops had been removed some time before to another house, where they were safe. The loss was only partially covered by insurance. It is supposed the fire arose from spontaneous combustion, hops being very inflammable.

SAN JOAQUIN.

VINES PRODUCE A TON TO THE ACRE.—Lodi Sentinel: On the two-year-old vineyard belonging to Jacob Hieb, on the Kettelman tract, south of town, the vines this season produced a ton to the acre, and Adolph Bauer, local manager for West's winery, pronounced the quality first class.

LAST OF THE FAMOUS HOG CASE.—Lodi Sentinel: The notorious "hog case," one of the longest drawn-out criminal proceedings in the history of this county, has been terminated. Friday the Supreme Court affirmed the judgment of the Superior Court in the case of Arthur Ennis, who was convicted of perjury in the case and sentenced to five years in San Quentin prison. The history of the case reads almost like a "dime" novel. Over a year ago Arthur Ennis, John Stennett and Paul Davis killed and cut up a large hog belonging to Ross Sargent, taking the same from the Sargent ranch, near Lodi. After considerable detective work on the part of Sheriff Sibley and his deputies, the three men were arrested. Stennett was the first one to be tried. He was acquitted through lack of evidence, but was convicted of the theft of another porker, and he also made admissions later which gave strong evidence against the other two. The men all had friends in and around Lodi, which made the acquiring of convincing evidence rather difficult, and on the first trial of Ennis the jury disagreed; likewise on the second trial. On the third trial, however, he was convicted and sentenced to six months in jail—the limit for petit larceny. Paul Davis was also convicted and given six months, but was charged with perjury. He pleaded guilty and was given a year in San Quentin. He has served both sentences. Stennett then turned State evidence against Ennis, who was charged with perjury and convicted. He appealed his case, with the result stated above. A. H. Carpenter, the attorney for the three men, was charged by District Attorney Ashley with subordination of perjury and convicted. He was sentenced to five years, but the Supreme Court reversed the judgment and ordered a second trial, whereupon the proceedings against him were dismissed on motion of the district attorney. Attorney A. H. Carpenter brought a libel suit for damages against District Attorney A. H. Ashley, the suit growing out of the "hog case." It is not believed, however, that this case will ever come to trial. Sheriff Sibley and his deputies, together with District Attorney Ashley and his deputies, worked very hard on the cases, and as a result of their efforts the farmers in the vicinity of Lodi were rid of a gang of thieves who bragged that they could not be convicted and were an annoyance to the community.

SANTA CLARA.

WINE GRAPES.—Mercury: The independent buying interests—that is, those opposed to the California Wine Association—are quoting figures at from \$24 to \$26 a ton. Sales at the first-named figure were reported yesterday, among the sellers being E. C. Singletary. There were statements among the growers that crop sales had been made for \$26 a ton by some West Side growers. These figures are slightly lower than those of last season. "There have been no new vineyards come into bearing within the past year worth speaking about," states a prominent wine man. "I doubt if there will be 2000 gallons of wine made in this valley from new stock the present season. On the other hand, the ravages of pests have not ceased, as far as old stock is concerned."

Of course, there is a large increase in the grafting of resistant vines; but little, if any, of this increase, has come into bearing the present season; therefore, I base my calculations that the output of the present year will not exceed that of last year. Moreover, some of the fruit was sunburned during the hot weather in the early summer, and this operates to decrease the output. All in all, I think it would be a fair estimate to say that the crop will scarcely be up to that of the past season."

SANTA CRUZ.

FRUIT NOTES.—Watsonville Pajaronian: Experienced fruit buyers say the best and highest grade Bellefleurs ever shipped from Pajaro valley have been sent to Eastern points this year.—Summer spraying is a necessity if the apple crop is to be saved hereafter. The codlin moth is here in large quantity. It rests with orchard owners whether this pest is to have control of the fruit crop or to be kept in check.—Fifty-nine carloads of apples were shipped from Watsonville the past week. The total shipments for the season to date are 137 cars, against 130 cars up to corresponding date last year.

SONOMA.

A FRUITING BANANA TREE.—F. O. Brandt has on his place a fruiting banana tree, the only one of the kind in this section. The tree has several healthy bunches of fruit. The peculiarity of this especial banana tree is that the bulb of the plant was sent to him from his boyhood home, La Crosse, Wis., where the tree is grown in hothouses.

SUTTER.

MONEY IN ALMONDS.—Independent: H. C. Clark of Yuba City has just finished gathering his Drake Seedling almonds, and from one and one-half acres his gross receipts are a little over \$525.

TEHAMA.

A GOOD MAST.—J. W. Woodrum from Hooker says there is a good mast this year and that the acorns are now falling. In other years that section of the country has been infested with many woodpeckers that carried away a considerable portion of the mast, but this year he says he has seen less than a dozen of these birds.

TULARE.

PREMIUM EIGHT ACRES.—Register: Albert Knapp has just picked his first crop of raisin grapes from a little 8-acre vineyard he has and has filled 43,000 trays, averaging twenty-five pounds to the tray, or about seven tons to the acre for first crop fruit. Mr. Knapp has another vineyard that he thinks is more heavily loaded than this one.

RAISIN GRAPES GOING TO WINERIES.—On the Paige ranch are 750 acres of vineyard, a vineyard that perhaps has more bearing vines in it than any other vineyard in the State, for every vine is bearing, not equally with every other, but bearing well, and not less than 4000 tons of grapes will be shipped from this vineyard to the wineries this year, and yet the grapes are mostly of the raisin varieties. The uncertainty of the raisin market and the good demand for wine grapes has caused the management to contract them all to the wineries and hardly a raisin will be made on the place, which seems a pity, seeing how big the berries are and how immense the crop.

VENTURA.

FIRST SHIPMENT OF LIMA BEANS.—M. L. Wolff of Hueneme shipped last week the first carload of Lima beans of the new season, the shipment being much earlier than usual. The crop is said to be fully three weeks ahead of that of last season and first harvesting shows a decrease of 10%. It is expected that by November 1 the entire crop will be harvested. Last year at this time only one-half of the crop was in the sack. The estimated yield for the southern bean counties comprising Ventura, Santa Barbara, Los Angeles and Orange will be 600,000 sacks. Last season sales were made at \$3.50 and later in the season the price went up. This season holders are reluctant to accept \$3.50 to \$3.60.

STATE OF OHIO, CITY OF TOLEDO, ss. LUCAS COUNTY,

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & Co., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1896.

A. W. GLEASON,
Notary Public.
Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.
F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

THE HOME CIRCLE.

Country Life.

Not what we would, but what we must,
Makes up the sum of living;
Heaven is both more and less than just
In taking and in giving.
Swords cleave to hands that sought the
plow,
And laurels miss the soldier's brow.

Me, whom the city holds, whose feet
Have worn its stony highways,
Familiar with its loneliest street—
Its ways are never my ways.
My cradle was beside the sea,
And there, I hope, my grave will be.

Old homestead! In that old gray town
The vane is seaward blowing;
The slip of garden stretches down
To where the tide is flowing;
Below they lie, their sails all furled.
The ships that go about the world.

Dearer that little country house,
In land with pines beside it;
Some peach trees, with unfruitful boughs,
A well, with weeds to hide it;
No flowers, or only such as rise
Self-sown, poor things, which all despise.

Dear country home! Can I forget
The least of thy sweet trifles?
The window vines which clamber yet,
Whose blooms the bee still rifles?
The roadside blackberries, growing ripe,
And in the woods the Indian pipe?

Happy the man who tills the field,
Content with rustic labor;
Earth does to him her fullness yield,
Hap what may to his neighbor.
Well days, sound nights—oh, can there be
A life more rational and free?

Dear country life of child and man!
For both the best and strongest,
That with the earliest race began,
And hast outlived the longest.
Their cities perished long ago.
Who the first farmers were we know.

Perhaps our Babels, too, will fall;
If so, no lamentations,
For Mother Earth will shelter all,
And feed the unborn nations;
Yes, and the swords that menace now
Will then be beaten to the plow.

—Richard Henry Stoddard.

The "Fleur de Lys."

Over on the mainland, five miles across the Bay of Galveston, a contractor is now engaged in rolling a four-room frame house from the edge of the hill, where last week it lay upon its side, to a ten-acre truck garden, two miles nearer the bay. The cottage was swept inland by the great tidal cataclysm which slew 11,000 people and destroyed \$30,000,000 worth of property in Galveston and its vicinity two years ago. The cottage on the mainland, which is now about to be restored to its former humble station by the sea, was once the home of a struggling truck farmer named Peter Gurney. On the night of the disaster, when his doors and windows were beaten in by the on-rushing waters, he put his wife and three children in his skiff and resolved to "stand by" his cottage. The skiff, driven inland upon the black crest of the tidal wave, piloted by the hands of a boy, then 11 years old, out-rode the hurricane and went around ten miles from tidewater. Gurney, in the garret of his cottage, was battered, disfigured and drowned when the sea swept his frail house from its piling and drove it, capsized, through the wreck of headlong waves and wind-driven ruin.

When she had found his body and the water had receded, the woman buried her husband's body in the little thicket that skirts across a corner of their "farm." Then she turned her face toward the west and said she would go beyond the reach of the waters and their ominous dirges. Her oldest child, who is almost a woman, said, "Let us go," but her youngest, who is a boy, and his sister, who is now 15, said: "Mammy, let us stay. This is our home. The sea was never like that before. Let us stay." Perhaps they stayed because they had no means for travel. They had no horse nor cart, no boat of size, no choice of egress. But the woman and her children made a "lean to" of drift from the

storm and dragged into it what remained of their household effects. The boy worked as few men worked and his sister, who was 13 years old, gave him heart and praised him and said, "We must stay." When spring came they made a garden again, and every morning the boy went "crabbing" in the bay, and, looking out across the turbulent floor of the gulf, spoke, and said: "I will get back all I can." At noon he started in his row boat out across the blue running tide, for the smoky Galveston shore, and at dusk he came back, tired, with his eight mile pull, but proud of the money that he got for the crabs and garden truck, and proudest of Nance, his sister, who went with him, sitting at the tiller and "minding" the boat while he went a-selling his wares uptown at the Tremont and the Pickwick. When May had passed he had money enough to buy some hens, and then he added fresh eggs to his small cargo, and his business thrived so that his mother wondered and took courage, though she kept her face toward the furrows in the garden and was afraid to look upon the sea.

One day a creole from Matagorda sailed his greasy, fish-smelling lugger into the slip at Galveston and made fast to the docks. Then he put a sign on his mast which read: For sail. \$25, and went to be a cook in a dingy eating house in the Strand. Upon the stern of his odorous lugger, in drab letters upon dirty green was the vessel's name, Fleur de Lys of Matagorda.

The other day I wandered down the Strand to the slip where the Mosquito fleet lay shimmering in the sun. Beyond, against the outer dock, lay the iron-clad Ikbail, an English ship, loading for Liverpool, with rice and cotton. At the corner of the slip was a dry goods box, with a bit of awning above it, a fly-specked glass case upon it, and behind it a sun-burnt, black-eyed, slim girl of, perhaps, 15, who was ladling out ice cream and lemonade to a gang of sweaty stevedores. Gigantic negroes, swarthy Portuguese, grinning Irishmen, stolid Dutchmen, bought treacle candy, watermelons, ice cream and lemonade, and pulled their forelocks, or touched their oily caps when she spoke to them. Across the warped front of this "stand" was the sign, "Polly Gurney. Refreshments."

Just beyond her, moored to the docks, lay the Fleur de Lys, the deck green with melons, red with chains of red peppers, ornate with piles of peaches, gorgeous shells and cut flowers. Forward there were coops of spring chickens and aft, under an awning in the shade, were cases of "new-laid" eggs.

Some buyers came down to the Fleur de Lys for crabs, which the young skipper fetched up from the hold in wet sacks. I watched him crate some eggs and load them into a wagon from the Pickwick cafe. Then he went back to his little vessel and began to haul up his crab nets, unloading his clawing, clicking catch into a ready basket. In the waits he would fish for mullet, fixing his line when an occasional customer came alongside and sometimes hopping up on the docks to visit Polly, his sister, or to slake his thirst with "a dip" at the lemonade. This is George Gurney, a boy of 13, and it is his home which the contractor is rolling back over two miles of boggy lowland to the little ten-acre farm which is his heritage and his home. In two years he has saved enough to pay for the Fleur de Lys, and has set aside the hundred dollars which he would pay for the rehabilitation of his home.

I don't know whether this is "much of a story." I watched this boy set sail the other day, when the sun was setting, and there was a mysterious mist that hid the far headland to which he goes every night. He keeps his unsold stuff in a refrigerator near the old fish market, and comes back each morning with a new supply. But it was the manner of the child, as he sat in the stern-sheets and closely hauled his mainsail to make off from moorings, that struck me. It was the old-fashioned mannish boy of business no longer. He laughed at Polly,

who went to 'tend jib, and he laughed as if he were only a boy at play. I saw him stand up, his foot against the tiller, and look out across the tumbling waters of the gulf, as if he loved them. It may have been the going home, or the sheer delight of sailing his own "ship" boldly forth into the sea, but it was not the calculating satisfaction of a "good day's business." Hope, courage, happiness were in his face. The Fleur de Lys swept round the docks and out into the tide and stood away, her brown sails reddening as the slanting sunlight fell upon them, the boat careening as the south wind came quartering strong against her, but sailing swift and true and seaworthy, like the little brown-faced master at the helm. And when they were gone into a dim blur I could hear Polly singing and the boy's mocking laughter.—Chicago Record-Herald.

Common Errors Corrected.

It is commonly believed that toads cause warts. This is based upon the following combination of facts: Toads are the only common animals that are naturally covered with wart-like lumps. They eject a clear liquid. This is supposed to do something. Warts appear mysteriously, and no one is able to explain the causes of their coming and going. It is erroneously inferred that they are produced by this wart-bearing, nocturnal creature with peculiar habits, upon the basis of the doctrine that "like produces like." The common belief that tadpoles shed their tails has for its origin the facts that while living in water each possesses a swimming tail, but when it metamorphoses into a frog or a toad it becomes tailless. In fact, the tail does not drop off, but it is absorbed and disappears in the body, just as a swelling from a bump on the head disappears. How often do we hear that frogs and toads have fallen with rain, and almost every July we may read accounts of such a phenomena. These may have for their basis the fact that during the month of July toads change from the tadpole stage and aquatic habitat to the adult form and terrestrial habitat, and then migrate landward in great numbers. They are active only at night or during hot weather, effectually concealing themselves in the most common places during the day time. However, when a rain falls at such a time they appear by thousands, as if by magic, and give the impression of having fallen with rain. The assertion that to kill a toad makes cows give bloody milk may have originated in a laudable effort to protect these beneficial animals.

There are doubtless more superstitions concerning snakes than any other creatures. This arises in part from the traditions of the form of the original tempter, and in part from the fact that but very few persons are willing to calmly observe serpents for themselves and learn the truth directly. We have met persons who believed that all snakes are venomous. This doubtless comes from the old Roman rule, "Ab uno disce omnes." How prevalent is the belief that horse hairs turn to snakes! There is no other foundation for this error than the resemblance of the so-called hair snake (Gordius) to a common horse hair. Snakes are often supposed to charm birds, but the facts are that the feathered songsters are paralyzed by fright when they suddenly see the reptiles at close proximity.

The common erroneous belief that snakes sting or bite by means of their tongues may come from the scriptural quotation, "It stingeth like an adder." The supposition that snakes bite themselves and die is doubtless based upon the actions of certain species, like the hog-nosed adder, which, when teased, will act as though dead, and thus sometimes find protection. It is very commonly thought that snakes' tails "live" or are active until sundown. This arises from the prolonged activity of the tail, due to the reflex action of the caudal nerve centers, which may continue for a longer or shorter period, owing to temperature and other con-

ditions. Many persons believe that there is a glass snake or joint snake, which may be broken to fragments when struck, but can rejoin itself and live. This may come from the fact that a certain lizard (Ophiosaurus ventralis) readily loses its tail, and while the body escapes the caudal member wiggles and attracts the attention of the pursuer.

It is generally thought that all lizards are venomous, yet the only one that is of is the Gila monster (two species of Heloderma), found only in the extreme southwestern United States and Mexico. This error may arise from the fact that lizards and serpents are closely related in appearance, structure and habits, and because some serpents are known to be venomous it is inferred that all snake-like creatures are.

The erroneous idea that turtles breathe under water, as do fishes, is derived from the observations of their having remained submerged for some hours. But this is made possible by their lung capacity, the repeated use of the air therein, their limited need of oxygen compared with that of warm-blooded animals, and their ability to store oxygen in their tissues and use it as needed.

Both species of American cuckoos (genus Coccyzus) build nests, contrary to the popular belief. The error comes from the fact that the European cuckoo (Cuculus) builds no nest, but is parasitic, laying its eggs in the nests of other birds, as does our cow bird (Molothrus). The old idea that "A sight of the oriole cures jaundice," doubtless is connected with the yellow color of the bird and the homeopathic doctrine, "Similia similibus curantur"—Like cures like. Nuthatches are wrongly accused of sucking sap merely because they slightly resemble the so-called sapsucker (Dryobates), and the latter is thought to be a sucker of sap because it makes holes in the bark of some fruit trees. This is nearly always done to obtain insects. Swallows are thought to hibernate in mud, because in damp places is where they are seen last in fall and first in spring. They migrate, as do most other birds.

Many persons believe that owls, cats and other nocturnal animals can see in absolute darkness. This error arises from the fact that in these animals the pupil of the eye is very large or dilatable, and in subdued or very feeble light they can see much better than can man. One can readily demonstrate the fallacy of the supposition by taking an owl or other nocturnal animal into a perfectly dark room, as we have done, and touching it with the hand. It does not move, even though it be an untamed animal. Cats and other nocturnal animals are erroneously thought to emit light from their eyes, because when looking toward the light the crystalline lens of the eye produces glaring reflection. The idea that swans sing when dying and moles open their eyes at the time of death are handed down from the writings of Pliny, and represent ignorance of the facts of zoology. Skunks afford the basis of many odd superstitions, because they, like serpents, are not studied deliberately, and therefore the truth about them is generally not known. There is sometimes justification in haste when near such animals, but generally the danger is more assumed than real.

We were once seriously asked by a teacher, "At what age do the little lambs' tails drop off?" He had accurately observed that the tails of the lambs are long, while those of the old sheep are short, and he obtained a false idea, which is, however, prevalent. Of course he was shocked to learn that sheep raisers amputate the tails to prevent the soiling of the wool.—Forest and Stream.

"What is this leathery stuff?" the diner asked, when the second course of the dinner was served. "That is a fillet of sole, sir," replied the waiter. "Take it away," said the diner, after attacking it with his fork, "and see if you can't get me a nice, tender piece of the upper, with the buttons removed."

Babyhood.

What is the little one thinking about?
Very wonderful things, no doubt!
Unwritten history!
Unfathomed mystery!
Yet he laughs and cries and eats and
drinks
And chuckles and crows and nods and
winks,
As if his head were as full of kinks
And curious riddles as any sphinx!
Warped by colic and wet by tears,
Punctured by pins and tortured by
fears,
Our little nephew will lose two years;
And he'll never know
Where the summers go—
He need not laugh, for he'll find it so.

Who can tell what a baby thinks?
Who can follow the gossamer links
By which the mankin feels his way
Out from the shore of the great unknown,
Blind, and wailing, and alone,
Into the light of day?
Out from the shore of the unknown sea,
Tossing in pitiful agony—
Of the unknown sea that reels and rolls,
Specked with the barks of little souls—
Barks that were launched on the other
side,
And slipped from heaven on an ebbing
tide!

What does he think of his mother's eyes?
What does he think of his mother's
hair?
What of the cradle roof that flies
Forward and backward through the
air?
What does he think of his mother's
breast,
Bare and beautiful, smooth and white,
Seeking it ever with fresh delight—
Cup of his life and couch of his
rest?
What does he think when her quick em-
brace
Presses his hand and buries his face
Deep where the heart throbs sink and
swell
With a tenderness she can never tell,
Though she murmur the words
Of all the birds—
Words she has learned to murmur well?
Now he thinks he'll go to sleep!
I can see the shadow creep
Over his eyes in soft eclipse,
Over his brow and over his lips,
Out to his little finger tips!
Softly sinking, down he goes!
Down he goes, down he goes!
See! he is hushed in sweet repose.

—J. G. Holland.

Doctoring Birds in Captivity.

Few of us have ever picked up a sick or diseased bird in the woods. Of course birds fall ill, but there are many reasons why they are seldom seen. There is such a severe struggle for very existence—finding food, avoiding enemies—that when a bird for any reason becomes less active or weakened, a very short time elapses before some hawk or other animal kills it. If by some rare chance it should die and drop to the ground, burying beetles—those insect undertakers of the nether world—set at work and in a day remove the carcass from view.

No matter how exactly natural conditions are copied, birds in confinement are bound to be attacked now and then by disease. When the collection of birds in the New York Zoological Park assumed an importance which warranted it, many books on avian diseases were purchased, and the majority were found to be almost worthless, especially those relating to the care of wild birds. So these were cast aside and experiments begun, which, though they cost more lives than one at first, soon yielded results which have proved invaluable. The bird's body is composed of flesh, blood and bones so like our own in composition, that, it was argued a priori, why would not the same therapeutics apply? In many instances perfect confirmation of this has resulted.

Birds differ from human beings in few important respects. For instance, the normal temperature of most birds is about 110°, which would kill a human being. The circulation is correspondingly rapid, and the effect of any medicine is apparent in a very short time. Out of thirty organic diseases which have caused death among the birds, all but four or five have yielded

to treatment and most of those cured have certain definite premonitory symptoms, so that they can be treated before an advanced stage renders recovery uncertain. Most of the recent deaths among the 700 odd birds have been due to accidents or occasional cats.

Colds are very common ailments among the birds, and if these are not attended to often lead to croup and diphtheria. Sometimes the latter disease appears in a bird without warning. A very little thickening of the third eyelid in a hawk may be the only outward sign that its throat is in a very bad diphtheritic condition. Malaria has been detected several times, and curiously enough, in herons and other wading birds, whose ordinary mode of life, one would think, would long ago have eliminated all birds disposed toward such a disease. Flamingos spend much of their time standing or walking in water, and yet they are extremely liable, when confined in damp places, to contract rheumatism. This and similar complaints often yield to a treatment of quinine alone. Corns are the bane of birds whose perches may be too large, or where the floors of the cages are not softened by a layer of sand or dirt. A corn will kill a bird of the largest size if left untreated. It is easily cured, and when a bird's foot has once recovered from such a trouble it seems to be immune, as the hardest of concrete has no further effect on it.

Canker is fortunately very rare, but the gapes, caused by tiny worms in the throat and trachea, is more common. Instead of ramming an oiled feather down the poor creature's throat, a much better way to effect a cure is to let the bird inhale the fumes of carbolic acid, and a very few sneezes will dislodge the troublesome worms. Parrots in two or three instances have had a peculiar disease, and by accident it was found that if the bird was kept continually in the glaring sunshine it recovered. Whether the heat is the curative agent is not yet known.

Children have rickets, and so do young birds, crows being the commonest victims. If a young crow is taken from its nest of sticks, and placed in a soft artificial nest, the inability to exercise the muscles of its feet and legs causes these to become loose jointed and useless, and no cure is yet known. Cuckoos and other birds are afflicted in this way. Owls have gout, and if neglected suffer terribly from it. If this disease is taken in its earliest stages continual dosing with Lithia water will cure it more rapidly than a human being could be relieved. For many reasons the idea of these peevish, grumbling, old-looking birds having gout is peculiarly appropriate.

Apoplexy is not unknown among timid birds, which sometimes, when suddenly frightened, drop dead without warning, a blood vessel always being found broken in the cerebellum. Or, again, the attack may only result in a temporary kind of fit, when a sudden bath of ice-water, will save the bird's life. When a bird eats large quantities of food and refuses to move any more than it has to, it becomes fatter and fatter, and this is a danger-sign which must be guarded against. A case like this is rare, but the several instances have yielded to a unique method of cure. Treatment here takes the shape of some other bird, harmless, but with an unpleasant temper. This latter is placed in the cage with the lazy degenerate, and the obese individual is kept on the move most of the day. It complains bitterly against such treatment and grows thinner every day—and consequently more healthy. This treatment sometimes so changes the disposition of the bird that it, in turn, may serve as a "mover-on" to some other bird, whose abundance of food and freedom from enemies has made it demoralized.

Many other interesting illnesses might be mentioned. Two cases of cholera have been recorded, both among the eagles, but the bacillus of this malady is easily killed. Tuberculosis has proved so far incurable, but it has occurred very rarely, as have most of the bacteriological diseases, for where birds have pure air and water, suitable food,

a normal temperature and abundant room in which to exercise, liability to diseases of this character is reduced to a minimum.

One cannot feel satisfied while there remains a single disease uncured. We take away no whit of the bird's enjoyment of life by confining them under such favorable conditions as those existing in the New York Zoological Park, and we also seek to make their lives as long or longer than they would be in a state of freedom.—New York Evening Post.

DOMESTIC ECONOMY.

Hints to Housekeepers.

If you have a cup of cold roast veal left over, chop it fine, season with pepper, salt and a dash of paprika and tuck it between the folds of an omelet. Pour over it before sending to the table a cup of hot, well seasoned tomato sauce.

To prepare tomato fritters, scald and peel as many tomatoes as will be needed and chop them fine. Season with salt and pepper and stir in enough flour to make a thin batter. With the flour mix about a half teaspoonful of soda. Fry in butter or lard over a quick fire and serve hot.

Fried cheese sandwiches may be made by cutting stale bread into thin slices and spread lightly with French mustard. Cover with a thick layer of grated cheese, sprinkle with salt and paprika. Press the slices of bread together and trim off the crusts. Heat a tablespoonful of butter and lard together in a spider. Fry the sandwiches on both sides till light brown. Serve very hot. If you have a morsel of cold ham on hand, chop it fine and sprinkle over the cheese with a few bits of shredded parsley.

If bouillon is not made a first course it may be served jellied, and with almonds as a salad course. It is particularly pretty when served in individual moulds. The jelly is easily made from extract of beef, well seasoned, diluted with hot water, and made into a delicate jelly with dissolved gelatine. A little is put into the bottom of the moulds, and the almonds, blanched and cut into strips, are arranged in a pattern in the jelly before the moulds are filled. When ready to serve, turn out on a bed of lettuce hearts, and send around with the course a stiff mayonnaise.

To make warmed-up meats appetizing, there are various commodities which ought to always occupy a place in the pantry. Have a small jar of onion butter, a bottle of caramel, a glass can filled with browned flour, a jar of finely rolled breadcrumbs, Worcestershire sauce, celery salt, mace, bay leaves, a bottle of Oscar sauce, tabasco, cayenne, curry, catsup, canned mushrooms, paprika, kitchen bouquet and horseradish. The secret of appetizing food is good flavoring, and a frequent varying of flavor has more to do with a tempting table than a large butcher bill.

Domestic Hints.

TAPIOCA ICE.—Soak one cup flake tapioca over night. In the morning place on the stove, and when boiling hot add one cup sugar and boil until perfectly clear. Chop one pineapple, pour over it the tapioca, stir together, and turn out to form. Serve ice cold with cream.

WHITE BREAD BREWIS.—Heat a pint of milk in a double boiler. Stir into it enough bits of stale wheat bread to absorb all the milk. Season with a little butter and salt. It should not be pasty or sloppy, but will be a light, dry porridge. It is a favorite with children, especially if served on a small, pretty saucer and dotted with bits of bright jelly. Serve hot.

TOMATO SOUP.—Put a generous tablespoonful of butter in a saucepan. When it is hot add half an onion chopped fine, let it stew gently for a few minutes,

then add a pint of canned tomatoes, cook half an hour. Rub a heaping tablespoonful of flour and one of butter smoothly together and stir into the tomatoes. Have ready a pint of boiling milk, pour the tomatoes into a puree sieve with the boiling milk and rub through the sieve. Season with salt and pepper and a very little sugar. Return to the fire, make it hot, but be careful not to let it boil, as it will curdle. Serve at once with croutons.

CHICKEN SOUFFLE.—Two tablespoons flour, two tablespoons butter, one teaspoon salt, one-eighth teaspoon pepper, two cups scalded milk, one-half cup stale breadcrumbs, two cups cold chicken, one tablespoon chopped parsley, three eggs. Make a white sauce from the butter, flour, salt, pepper and milk. Add the crumbs and cook until quite thick. Take from the fire and beat in the chicken, parsley and the yolks of the eggs beaten till thick and lemon colored. Whip the whites until stiff and dry and fold in. Pour into a buttered dish and set in a pan of hot water and bake in a hot oven thirty-five minutes.

STRIPED OR ROCK BASS A LA BERCY.—Prepare two small bass, each of two pounds, and when very clean cut the heads into pieces, adding a few large bones from other fish; put all these into a small saucepan and moisten to their height with a good fish court bouillon, prepared with white wine; season, let the liquid boil for a quarter of an hour, so as to extract all the essence from the bones, then strain and skim off the fat. Have a small oval baking tin with raised edges, just large enough to hold the fillets of fish; sprinkle over with chopped-up onions, shallots and mushroom parings; lay the fillets of fish on top, and moisten to its height with some of the above court bouillon; after the liquid has come to a boil set the pan into a moderate oven, so that the fish cooks for fifteen minutes, then drain and dress the fillets on a medium-sized dish, covering it with a smaller one to keep it hot. Strain the broth, free it from fat, and pour into it two spoonfuls of good white wine, then let it reduce to the consistency of a half glaze; take it off, stir in a piece of butter, finishing with lemon juice; pour this sauce over the fish. Glaze this sauce immediately with an iron or gas salamander for two minutes, or, if there be neither, lay the dish on a thick baking sheet and set it in a brisk oven, being careful not to disturb the sauce.

"So you have at last settled on a name for the baby?" "Yes'm. First we named him Hobson, then changed it to Dewey, an' afterward to Funston Schley Johnson. But now we've named him jes' plain Jim. Yo' nevah finds you've made a mistake when yo' calls 'em jes' nothin' but plain Jim."

"Your husband is a floor walker in a department store, isn't he?" "Yes." "Then, why don't you have him get up and walk the floor with the baby when she cries?" "I can't wake him up. When I shake him and tell him what's the matter he mumbles something about soothing syrup in the drug department three aisles down, and then goes to snoring again."

The small boy with red bumps decorating his arms and face came howling down the road. Inquisitive Johnny stopped him. "Gee!" he remarked, as he observed the lumps. "What you've got is hives. They come out." "Hives!" howled the afflicted one. "Hives come out, nothin'! It was th' bees themselves!"

"Supposing," said Mr. Sirius Barker during a pleasure trip on an excursion boat, "that I were to fall overboard. What would you do?" "Oh!" exclaimed Mrs. Barker, with a gasp, "I'd cry my eyes out." "I knew it. That's just like a woman. Always looking for a way to make matters worse. Can't you see that crying wouldn't do the slightest good, and that it would only make the water deeper?"

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Oct. 1, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	69 1/4 @ 69	70 1/4 @ 70
Thursday.....	68 3/4 @ 69 1/4	70 @ 70 3/4
Friday.....	69 @ 69 1/4	70 @ 70 3/4
Saturday.....	69 1/4 @ 69 1/4	70 1/4 @ 69 3/4
Monday.....	69 1/4 @ 68 3/4	70 @ 69 3/4
Tuesday.....	68 3/4 @ 68 3/4	69 1/4 @ 70

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	30 1/4 @ 31 1/4	31 1/4 @ 31 1/4
Thursday.....	31 1/4 @ 31 1/4	31 1/4 @ 31 1/4
Friday.....	31 @ 31 1/4	31 1/4 @ 31 3/4
Saturday.....	31 1/4 @ 31	32 1/4 @ 32
Monday.....	31 1/4 @ 30 3/4	32 @ 31 1/4
Tuesday.....	30 3/4 @ 30 3/4	31 1/4 @ 31 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 19 1/2 @ 20 1/2	\$1 21 1/4 @ 22 1/4
Friday.....	1 20 @ 21 1/2	1 23 1/4 @ 23 3/4
Saturday.....	1 20 @ 21 1/2	1 23 1/4 @ 23 3/4
Monday.....	1 20 1/4 @ 21	1 22 @ 21 1/2
Tuesday.....	1 19 1/2 @ 19 3/4	1 22 @ 21 1/4
Wednesday.....	1 20 1/4 @ 22	1 22 1/4 @ 23 1/4

WHEAT.

While the market has been less buoyant in tone than for greater part of preceding fortnight, values for spot wheat have not inclined to any material degree in favor of the buying interest. The English market has not exhibited strength corresponding with that lately developed here. It has been mainly through weakness in freights that the upward movement locally in wheat values has been sustained. The freight market is still weak, and while it may drop to lower levels, the breaks are not likely to be very pronounced from this time forward, nor are any lower figures which may be established be apt to remain long in force, as ships are now going at rates affording little or no profit to owners. Vessels were obtainable this week for grain carrying at 20 shillings per ton to Europe, usual option as to final destination. This is scarcely 25c per cental, and is lower than carrying rates have been for a long time. In the past ocean freight rates have been on several occasions as low as 16 shillings per ton, but this has invariably resulted in diverting shipping to other parts of the world, and sooner or later caused carrying charges from here to foreign ports to rule abnormally high. Desirable iron ships have secured as freight money over £5 per ton on wheat from here to Europe. One wooden ship realized over \$100,000 freight on a wheat cargo from here to Liverpool. On the present market the same service would not bring over \$18,000. Such high figures for ships, as above noted, may not be realized again, but it is not reasonable to expect that they will long remain much under 25 shillings, this figure being necessary for a moderate profit to ships receiving no subsidy.

California Milling.....	1 20 @ 1 25
Cal. No. 1 shipping, alongside.....	1 17 1/4 @ 1 18 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 15 @ 1 17 1/4

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	5s 10 1/4 @ 5s 11 1/4	6s 5d @ 6s 5 1/4d
Freight rates.....	38 1/4 @ 37 1/4s	20 @ 21 1/4s
Local market.....	95 @ 98 1/4	1 17 1/4 @ 1 20

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.19 1/2 @ 1.22.

May, 1903, delivery, \$1.21 1/2 @ 1.23 1/4.

Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.20 1/2 @ 1.22; May, 1903, \$1.22 1/2 @ 1.23 1/4.

FLOUR.

The market is moderately firm in tone, but actual selling prices for flour in a wholesale way have not improved correspondingly with values for wheat. Oregon and Washington flours are, in fact, offering in this market, at about as favorable figures to buyers as were current a month ago. Liberal shipments are being made to Asia and South America, mainly of stocks which are going forward on contracts.

Superfine, lower grades..... \$2 40 @ 25

Superfine, good to choice.....	2 75 @ 3 00
Country grades, extras.....	3 40 @ 3 60
Choice and extra choice.....	3 60 @ 3 90
Fancy brands, jobbing.....	3 90 @ 4 00
Oregon, Bakers' extra.....	3 00 @ 3 30
Washington, Bakers' extra.....	3 00 @ 3 50

BARLEY.

The comparatively stiff prices which have been established lately for this cereal have checked the demand somewhat, and the tone of the market is less buoyant. There are no great quantities of barley now being offered, however, from either first or second hands, and the development of any special weakness during the balance of the current season is not considered probable, even though the movement should continue light. Last week's shipments footed up nearly 23,000 tons, bringing the barley exports for the past three months to over 93,000 tons, as against less than 60,000 tons wheat shipped in same period.

Feed, No. 1 to choice.....	1 10 @ 1 12 1/4
Feed, fair to good.....	1 07 1/4 @ 1 10
Brewing, No. 1 to choice new.....	1 12 1/4 @ 1 15
Chevalier, No. 1 to choice.....	1 35 @ 1 50
Chevalier, common to fair.....	1 15 @ 1 30

OATS.

Values have ruled fairly steady since last review, but demand at full current rates was not brisk, especially for other than very best qualities. There should be no trouble in maintaining current figures for oats, as they are decidedly reasonable, compared with prices for other cereals.

White Oats, fancy feed.....	1 20 @ 1 22 1/4
White, good to choice.....	1 12 1/4 @ 1 17 1/4
White, poor to fair.....	1 07 1/4 @ 1 10
Gray, common to choice.....	1 10 @ 1 20
Milling.....	1 17 1/4 @ 1 22 1/4
Surprise, good to choice.....	1 20 @ 1 25
Black Russian.....	95 @ 1 20
Red.....	97 1/4 @ 1 17 1/4

CORN.

Stocks are too light to admit of other than light jobbing operations. Values for Yellow corn remain practically about as last quoted. White is so nearly out of stock as not to admit of regular quotations.

Large White, good to choice.....	— @ —
Large Yellow.....	1 42 1/4 @ 1 45
Small Yellow.....	1 45 @ 1 47 1/4

RYE.

Receipts and offerings are light. Holders have again advanced asking figures.

Good to choice..... 1 02 1/4 @ 1 07 1/4

BUCKWHEAT.

The same inactivity previously noted. No changes to record in quotations, but values are largely nominal.

Good to choice..... 1 55 @ 1 70

BEANS.

The bean market as a whole is showing much better condition than was generally anticipated at the opening of the season. Lady Washington beans, which a few weeks ago sold at \$2 20 per cental in carload lots, are not now obtainable under \$2.75 for like quality. Holders of choice are asking \$2.80, and this figure was to-day realized to cover shorts. Offerings of new crop beans to date have been mostly Lady Washingtons, Pinks, Rayos and Black-eyes, with first named variety showing large majority in the aggregate offerings. The Eastern crop is reported later than usual, and the yield promises to be lighter than ordinarily.

Pea, fair to good, 100 lbs.....	3 00 @ 3 25
Small White, good to choice.....	2 40 @ 2 50
Lady Washington.....	2 50 @ 2 75
Pinks.....	2 15 @ 2 25
Bayos, good to choice.....	2 55 @ 2 75
Reds.....	2 25 @ 2 40
Red Kidney.....	2 75 @ 3 00
Limas, good to choice.....	3 80 @ 3 85
Black-eye Beans.....	3 25 @ 3 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Market is not showing much life, but values are being tolerably well maintained at the quoted range. As previously noted, there is more call for Niles than for Green at present, and former variety is commanding the best figures.

Green Peas, California.....	1 50 @ —
Niles Peas.....	1 75 @ —

WOOL.

Considerable Fall wool has changed hands in the interior during the past few weeks at prices fully on a par with the best figures quotable in this center. The market for all choice wools is decidedly firm at prevailing values, and there is little or no probability of materially lower figures soon being current. Offerings in this center are principally heavy and defective fleeces, and for this description it is difficult to secure custom, even at seemingly low rates.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15

Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

Arrivals in this center have been of fairly liberal volume during the past week, but they have mostly represented deliveries on contracts. There is very little doing in this center in the way of wholesale spot trading. Quotable values for 1902 California hops remain nominally at 20 @ 24c, with some growers contending for more, but it is doubtful if free transfers could be affected at above quoted range. A New York review summarizes as follows: "Our local market is still in an unsettled condition. Supplies of new hops are coming forward slowly and stocks of 1900 and 1901 hops are small and in few hands, but brewers are apparently not needing many goods at the moment and are disposed to hold off and await developments. Dealers are interested to some extent, but with many there is a feeling that prices are starting high. Influences of a bullish character are affecting the situation, however, and there is much uncertainty as to just what course the market will take in the near future. Harvest in New York State is completed and the crop is estimated to be about 25,000 bales. Growers are in no hurry to market these, and while a few small lots have been picked up at 28 @ 29c, no important purchases could be made below 30c, and some of the best lots are held higher. Picking is nearly completed on the Pacific Coast, and it seems probable that the yield will run over 180,000 bales, which would make the crop of the United States about 205,000 bales. It now looks as if England will not pick over 325,000 to 350,000 cwts.—perhaps the outside figure is too high. The German crop promises to be a heavy one, but late cables report some advance owing to considerable sales to London and New York. These goods are being sold here at 35c. to brewers, and dealers have taken on a number of lots at a cost of about 32 @ 33c. in New York."

HAY AND STRAW.

While the hay market is noteworthy for strength, previously quoted values remain in force. The weather could not well have been more favorable for curing and housing this season's crop. Most of the hay is showing high average quality, and in consequence low-grade stock is commanding better figures than ordinarily. Local dealers have the bulk of supplies in hand, so there is little prospect of the market inclining materially in favor of buyers during balance of the season.

Wheat, good to choice.....	10 50 @ 13 00
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 11 00
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 00
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 00
Straw, 1/2 bale.....	37 1/4 @ 50

MILLSTUFFS.

All descriptions of mill offal are bringing much the same stiff prices as previously quoted, offerings continuing of rather small proportions. Rolled Barley was held at practically unchanged figures, but the undertone of the market was easier. Quotable values for Milled Corn remained as before.

Brn, 1/2 ton.....	20 00 @ 21 00
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 00 @ 22 50
Barley, Rolled.....	23 00 @ 24 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Mustard Seed is in too light spot stock to admit of other than light jobbing operations. Flaxseed is ruling steady; the bulk of arrivals representing deliveries on contracts. Canary and Hemp seed are being offered sparingly and market for both is firm at the quotations.

	Per ctt.
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 10 @ 3 50
	Per lb.
Canary.....	4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/2 @ 4

BAGS AND BAGGING.

The Grain Bag market is dull and lacking in firmness. Calcuttas of this year's importation are being offered in a wholesale way down to 5c., and at this figure large buyers show no disposition to take hold. Indications are favorable for low prices for this article the coming season.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	5 @ 5 1/4

San Francisco Grain Bags, 22x36, spot.....	5 1/4 @ 6
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

The Hide market showed a little easier tone, in sympathy with recent declines in Eastern centers. Previous quotations on Pelts remain current, but demand is not brisk at full figures. Values for Tallow are being well maintained at same range quoted for several weeks past.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 1/4 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 1/4 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	6 @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 17	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 80 @ —
Salted Horse Hides medium.....	2 25 @ —	2 50 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	100 @ —
Pelts, medium, 1/2 skin.....	50 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	40 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	6 @ —
Tallow, No. 2.....	4 1/2 @ —	5 @ —
Goat Skins, perfect.....	30 @ —	37 1/4 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

There were comparatively heavy shipments outward the current week for a light crop year. A sailing vessel, with mixed cargo for London, took 315 cases extracted. A steamer in the new German line took 150 cases for Germany. Spot stocks and offerings are small, and especially is high-grade water white honey in limited supply, with market for this description decidedly firm.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/4
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	12 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/4

BEESWAX.

Stocks are of small compass, both at producing points and in this center. There is no trouble in securing custom at full current values.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Quotable values for Beef are without change, but any fluctuations in the near future are apt to be stiffer figures, the market having a firm tone. Values for Mutton are being well maintained at last quoted range, with demand fair and offerings only moderate. Lamb is not arriving in heavy quantity and is selling to good advantage. Veal is in fair receipt, but for good to choice large market shows steadiness. Hogs of the medium sizes, such as are desirable for packers, are in good request and are meeting with a firm market.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 80; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/4
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 1/2 lb.....	7 1/4 @ 9
Veal, large, 1/2 lb.....	7 @ 8 1/4
Lamb, spring, 1/2 lb.....	9 @ 9 1/4

POULTRY.

Arrivals of poultry were tolerably heavy, both of domestic and Eastern. A considerable proportion of the offerings showed poor condition, and for this sort the market was decidedly slow and lacking in firmness. Large and fat fowls were in moderate request at comparatively fair prices. Broilers in prime to choice condition were also salable to fair advantage. Inquiry for full grown young chickens was not very active, unless they were

above the average in size and were in first-class condition.

Turkeys, alive, choice young.....	16	@	18
Turkeys, alive, Hens, # lb.....	15	@	16
Turkeys, alive, Gobblers, # lb.....	15	@	16
Hens, California, # dozen.....	4	@	50
Roosters, old.....	4	@	50
Roosters, young (full-grown).....	4	@	50
Fryers.....	3	@	50
Broilers, large.....	3	@	50
Broilers, small to medium.....	3	@	50
Ducks, old, # dozen.....	2	@	50
Ducks, young, # dozen.....	2	@	50
Geese, # pair.....	1	@	75
Goslings, # pair.....	1	@	75
Pigeons, old, # dozen.....	1	@	25
Pigeons, young.....	1	@	75

BUTTER.

Trade continues to be principally on cold storage goods, which are being crowded to consumption as fast as existing conditions will admit of. Inquiry for fresh is confined mainly to a few favorite marks, and at extreme current rates not much of this butter is required to satisfy the demand.

Creamery, extras, # lb.....	30	@	32
Creamery, firsts.....	27 1/2	@	29
Dairy, select.....	27 1/4	@	—
Dairy, firsts.....	25	@	26
Dairy seconds.....	21	@	23
Firkin, good to choice.....	21	@	23
Mixed store.....	18	@	20
Pickled Roll.....	22 1/4	@	24

CHEESE.

Mild-flavored new of high grade is not plentiful, and for this description the market is firm, with sales in a small way above quotable values. Cheese having more or less "sharpness" in taste is in fair supply and market for this sort is not inclining especially in favor of sellers. Eastern markets continue firm.

California, fancy flat, new.....	12	@	12 1/4
California, good to choice.....	11	@	12
California, "Young Americas".....	11 1/2	@	13

EGGS.

Market continues to be very lightly stocked with choice to select fresh, and for this description comparatively stiff prices are being realized in a limited way, small transfers being reported up to 42c. To command this figure the eggs have to be delivered to buyers, and have to be uniformly large, white, clean and about perfect in every respect. Fresh eggs which are not fancy are not sought after, cold storage stock being used instead. There are free offerings of cold storage eggs and fair receipts of Eastern eggs, the latter being termed fresh, but having been held in storage 60 to 90 days.

California, select, large, white and fresh.....	40	@	41
California, select, irregular color & size.....	32 1/2	@	37 1/2
California, good to choice store.....	25	@	30

VEGETABLES.

Most kinds of vegetables showed reduced receipt, and for choice stock the general tendency of the market was to firmness. Beans and Peas of desirable quality inclined in favor of sellers. Corn was in such light receipt as to be hardly quotable, with offerings mostly under choice. Tomatoes brought in the main fairly steady figures. Onions were in good supply and remained quotable about as last noted, with demand only moderate.

Beans, Lima, # lb.....	3	@	3 1/4
Beans, String, # lb.....	1 1/4	@	2 1/4
Cabbage, choice garden, # 100 lbs.....	65	@	75
Cucumbers, # large box.....	35	@	50
Egg Plant, # large box.....	40	@	65
Garlic, # lb.....	1 1/4	@	2
Onions, Yellow Danver, # cental.....	45	@	55
Okra, Green, # box.....	40	@	60
Peas, Sweet garden, # lb.....	3	@	5
Peppers, Green Chile, # box.....	50	@	75
Peppers, Bell, # box.....	50	@	75
Summer Squash, Bay, # large box.....	50	@	75
Tomatoes, # large box.....	35	@	60

POTATOES.

The old freight rate of 75c per cental to Texas points went into effect yesterday, as against the 55c rate lately current. Demand for best qualities of Burbanks has been fair the current week and values for desirable stock have shown no material depreciation. Red potatoes are scarce, and in a small way on shipping orders are commanding 85c@91 per cental. Sweeters were in good supply and were offered at reduced figures.

Burbanks, Salinas, # cental.....	90	@	1 15
River Burbanks, good to select, # cental.....	35	@	50
River Reds.....	65	@	90
Sweet Potatoes, # cental.....	1	@	25

The Fruit Market.

FRESH FRUITS.

The market is very lightly stocked with choice to select Apples, and such are in good request at tolerably stiff figures. Fancy 4-tier Gravenstein are quotable up to \$1.25 per regular box, and in a limited way would probably command a moderate advance on this figure. Common Apples, or such as might be designated fair to good, are in more than ample supply to satisfy the inquiry for stock of this description, and market for this sort presents an easy tone. Peaches were not in

particularly heavy receipt, but prices remained about as favorable to buyers as previously quoted, the demand being mostly of a retail character. Quinces were offered in moderate quantity, but did not meet with much custom, or bring what could be termed good prices. Plums and Prunes continued in sufficiently liberal supply to give buyers the advantage, demand not being brisk. Grape market showed fully as good condition as preceding week. In the line of Table Grapes, Seedless were in lightest supply and brought the best prices. Wine Grapes were in good request, straight Zinfandel being given the preference and bringing the best figures. Cantaloupes and Nutmeg Melons were mostly rather too ripe to be desirable and prices in consequence tended downward. Watermelons were held at about same range of prices as preceding week, but demand was less active. There were no heavy offerings of Domestic Berries of any variety, and it was the exception where the quality was of as good average as in the middle of the season. Cranberries from the East and Coos Bay were on market, the Eastern ranging from \$8@9 per barrel, and Coos Bay from \$2.75@3.25 per 60-lb. box.

Apples, # fancy, 4-tier box.....	1	@	1 25
Apples, good to choice, # 50-lb. box.....	60	@	90
Apples, common to fair, # 50-lb. box.....	25	@	50
Cantaloupes, # crate.....	50	@	1 00
Cranberries, Cape Cod, # barrel.....	8	@	00@9 00
Raspberries, # chest.....	6	@	00@8 00
Figs, 1-layer box, 30@40; 2-layer.....	50	@	75
Grapes, # ornichon, # crate.....	75	@	1 25
Grapes, Fontainebleau, # crate.....	25	@	50
Grapes, Isabella, # crate.....	40	@	65
Grapes, Muscat, # crate.....	40	@	75
Grapes, Black, # crate.....	30	@	65
Grapes, Seedless, # crate.....	65	@	1 00
Grapes, Tokay, # crate.....	40	@	75
Grapes, Zinfandel, # ton.....	29	@	00@38 00
Grapes, Mission, # ton.....	26	@	00@28 00
Nutmeg Melons, # box.....	30	@	50
Peaches, # box.....	35	@	80
Pears, Bartlett, No. 1, 40-lb box.....	90	@	1 00
Pears, other kinds, # box.....	40	@	75
Plums, choice large, # box or crate.....	40	@	50
Plums, small, # box.....	30	@	40
Prunes, # crate.....	25	@	50
Pomegranates, # small box.....	50	@	75
Quinces, # box.....	25	@	50
Strawberries, Longworth, # chest.....	6	@	00@8 00
Strawberries, Large, # chest.....	3	@	00@5 00
Watermelons, # doz.....	1	@	00@2 50
Whortleberries, # lb.....	4	@	6

DRIED FRUITS.

Taken as a whole, the market for cured and evaporated fruits shows generally healthy condition. There is a very fair movement, both outward and on local account, and on most desirable qualities full current values are being, as a rule, well maintained. In quotable prices there are few noteworthy changes to record, but on choice to select stock of almost every variety, it is an easier task to secure custom at full figures than it is to find sellers willing and able to unload high-grade fruit in wholesale fashion at prevailing values. Choice to select Apricots were in active request and were salable at better average figures than had been ruling. Peaches also inclined in favor of the producing and selling interest, particularly where the quality was of high grade. Pressed Figs are being more firmly held than at the beginning of the season, and market for sun-dried in sacks is also showing improvement, more especially for white, which are in active request. Apples were in increased stock, both evaporated and sun-dried, and quotable values were at a slightly lower range, this being about the only noteworthy instance in the dried fruit line where quotations showed reduction. The development of much weakness is not looked for here, however, as Eastern market is rather firm. Prune market continues firm for 40-50's, this size being difficult to obtain in wholesale quantity at half a cent premium over the schedule rate on the 2 1/2@2 1/4 basis for the four sizes. The medium size Prunes are ruling fairly steady, but the movement in them is not very brisk. Small Prunes are receiving very little attention and sales are difficult to effect at the quotations. In fact, common qualities of nearly all kinds of dried fruit are moving slowly, the inquiry being mainly for the higher grades.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5	@	5 1/2
Apricots, Moorpark.....	7	@	9
Apricots, Royal, good to choice, # lb.....	5	@	6 1/4
Apricots, Royal, fancy.....	6 1/2	@	7
Figs, 10-lb. box, 1-lb. cartons.....	50	@	75
Nectarines, # lb.....	4	@	4 1/4
Peaches, unpeeled, choice.....	4 1/4	@	5
Peaches, unpeeled, fancy.....	5 1/4	@	7 1/4
Pears, halves, fancy.....	6 1/4	@	7 1/4
Pears, halves, choice.....	5 1/4	@	6
Pears, halves, fair to good.....	3 1/4	@	4 1/4
Plums, Black, pitted.....	4	@	5
Plums, Red and Yellow.....	5	@	6
Prunes, Silver, good to fancy.....	3 1/4	@	6
Prunes, in bags, 4 sizes, 2 1/2@2 1/4; 40-50s, 4 1/4@5c; 50-60s, 3 1/4@3 1/2; 60-80s, 2 3/4@3 1/2; 70-80s, 2 1/4@3 1/2; 80-90s, 2@2 1/2; 90-100s, 1 1/2@1 3/4c.			

COMMON SUN-DRIED.

Apples, sliced.....	4	@	—
Apples, quartered.....	3 1/4	@	—
Figs, White, in bulk.....	3 1/4	@	3 1/4

Figs, Black, in sacks, # lb.....	2 1/4	@	3
Plums, unpitted, # lb.....	1 1/4	@	2 1/4

RAISINS.

The Growers' Association has named prices for Raisins of current crop, which are given below. These prices, which are subject to change without notice, are said to net to growers 4c in the sweat box. Raisins are now going outward quite freely, as dealers are desirous of stocking up as soon as possible for the mid-Winter holiday trade.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5c # lb; No. 3 crown do, 5 1/4c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/4c; No. 2 crown London Layers, 20-lb boxes, \$1.30 # box; No. 3 crown do, \$1.40; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

Oranges continue to be represented on market, with quotable values tolerably well maintained, but demand for this fruit is now of very light proportions. Lemons are being offered freely at practically same figures current for some weeks past, and market is devoid of noteworthy firmness, especially for other than most select. Limes are about out of stock, but a fresh invoice is now due.

Oranges, Late Valencia, # box.....	3	@	50@4 50
Lemons—California, select, # box.....	2	@	75@3 00
California, good to choice.....	1	@	75@2 50
California, common to fair.....	1	@	00@1 50

NUTS.

The Almond market is not quotably lower, most desirable qualities being as a rule steadily held. In some instances prices are being slightly shaded, more on account of quality not being up to top notch than of lack of firmness in the market. Walnuts are hardly quotable, the associations having already sold all they can possibly deliver. Offerings at this date would likely command an advance. Peanuts are not in heavy supply and are in fair request at current values.

California Almonds, shelled.....	16	@	20
California Almonds, paper shell, # lb.....	11 1/4	@	12 1/4
California Almonds, soft shell.....	9	@	10
California Almonds, hard shell.....	7	@	8
Peanuts, California, fair to prime.....	4 1/4	@	5 1/4
Peanuts, Eastern, hand-picked.....	6	@	6 1/4

WINE.

In the way of wholesale trading in the wine market, or in transfers from first hands, there is no evidence of anything of consequence doing. There is, in fact, so little wine offering from growers at present that there is no opportunity for much trading. Dry wines of last year's vintage remain quotable nominally at 22@26c. per gallon, but higher figures would have to be paid to secure the most desirable stock. Market for wine grapes continues firm, with good demand at a slightly higher range. Grapes for dry wines range from \$23@33 per ton for fair to choice, as to district, quality and location. The latter figure was paid this week at Rutherford. In the sweet wine sections grapes are bringing from \$12@20 ton, as to kind, inside figures being for common Tokays and second crop Muscats, and outside price for choice white grapes.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:


FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	140,205	1,609,215
Wheat, centals.....	71,916	1,220,963
Barley, centals.....	489,162	2,495,979
Oats, centals.....	53,052	241,820
Corn, centals.....	2,611	15,255
Rye, centals.....	2,331	68,485
Beans, sacks.....	18,457	76,704
Potatoes, sacks.....	29,557	304,504
Onions, sacks.....	9,087	74,514
Hay, tons.....	57,311	57,311
Wool, bales.....	1,310	18,168
Hops, bales.....	1,319	1,851

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	71,888	1,078,304
Wheat, centals.....	44,802	1,157,666
Barley, centals.....	455,910	1,845,875
Oats, centals.....	1,170	9,929
Corn, centals.....	117	10,314
Beans, sacks.....	587	4,628
Hay, bales.....	1,923	38,588
Wool, pounds.....	32,148	372,655
Hops, pounds.....	40,903	46,105
Honey, cases.....	—	719
Potatoes, pack's....	291	17,189

Eastern Dried Fruit Market.

NEW YORK, Oct. 1.—Evaporated apples are arriving in greater volume, and with a limited demand stocks show some accumulation. The market is a shade easier. Common are quoted at 4 1/4@5c; prime, 6 1/4@7c; choice, 7@7 1/4c; fancy, 7 1/4@8c. Spot prunes continue firm at 3 1/4@7 1/4c for all grades. Apricots are steady and unchanged. Peaches are quiet, but fairly steady at 12@16c for peeled and 7@10 1/4c for unpeeled.



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THE VETERINARIAN.

Preventing Hog Cholera.

This disease may be held in check to some extent, and Dr. A. T. Peters of the Nebraska Experiment Station in a recent bulletin calls attention to preventive measures. He says: It seems strange that in the fall, and especially when there is an abundance of forage and when green corn is fed to hogs, this disease becomes quite prevalent. I believe that it is dangerous to give hogs more feed than they can readily consume. It is well to use preventive measures. First, the pens where the animals are housed should be kept clean. That means free from excessive filth and putrid food, and especially lice. See that the animals are in a thriving and healthy condition. See that they are free from lice, that the pen, as well as the hog house, is free from lice. Use slaked lime or gas drip freely around the pens and around the yards.

If you notice that animals pass worms, treat them for worms. You may use turpentine in the feed. Give an average animal a tablespoonful. It is well to administer it on an empty stomach, or you may give the following coal tar creosote solution: Coal creosote one ounce, water ninety-nine ounces. Ninety-nine ounces of water equals six pints and three ounces.

GIVING THE MEDICINE.—One ounce of this is a dose for a full grown animal, and is best administered with the morning feed. If you wish to drench the animal and not give it the feed use a drenching tube. A drenching tube may be made by taking an ordinary tin funnel and rubber tube or hose, say 3 feet long and $\frac{3}{8}$ to $\frac{1}{2}$ inch in diameter. Into this rubber tube insert the lower end of the funnel, and then drench the animal by placing the rubber tube between the animal's back teeth, allowing the hog to bite on it. It is also well to place a piece of metal at the end of the rubber tubing, so that the animal may bite on it continually without stopping the flow of fluid by pinching the rubber hose. It is of great importance not to close the patient's nostrils while drenching. Avoid dusty pens and dusty feed yards, especially in hot weather.

If the premises should become infected with cholera, care should be taken to dispose of the dead carcasses. It is far better to burn them along with the litter that has accumulated, if it is possible, than to bury them, because if buried they may become rooted up at some future time and produce another outbreak. Air-slaked lime and gas drip (which can be secured from any gas house at very reasonable cost), are the very best disinfectants that can be used, and no hog raiser should be without them.

A GOOD PREVENTIVE.—To treat the affected animals it is well in the first place to give them very scant rations. One should not be at all alarmed if the animal does not eat for several days; in fact, that should not be a matter of great concern. Rest is essential. Try and keep the sick animals as quiet as possible. If the animals will eat food, probably as good a medicinal remedy as can be given is the official government prescription, which is as follows: One pound each of wood charcoal, sulphur, sulphate of soda and antimony

sulphite; two pounds each of common salt, sodium hyposulphite and sodium sulphate. These ingredients can be secured from any drug store and should be thoroughly mixed. The dose is a large tablespoonful to each 200 pounds weight of hog, once a day. If the animals do not eat, add a little water to the medicine, shake thoroughly and give as a drench.

Ergotism.

Ergotism, says N. S. Mayo in a recent bulletin of the Kansas Experiment Station, is a disease of animals caused by eating ergot either on pasture grasses or hay. Ergot is a parasitic fungus (*Claviceps purpurea*) that develops on the heads of wild rye, redtop, and similar grasses. This fungus replaces the ordinary seed or grain with a black or brown black grain much longer than the ordinary rye grain, cylindrical, pointed, and slightly curved. The number of grains of ergot in a single head of rye or grass will vary from one to a dozen or more. The grains of ergot can be easily recognized by their shape and color. There is no dust or smut upon the heads of grain as there is with some fungi. Ergot does not attack corn or sorghum.

Outbreaks of ergotism occur nearly all over the world and often cause heavy losses among cattle and horses. Serious losses from ergot in this State have not occurred since 1884, but it is possible that owing to the abundance of ergot upon grasses the present season, serious loss may follow unless care is exercised to prevent feeding a large amount of ergot. Cold weather and a limited supply of drinking water seem to favor the development of ergotism.

SYMPTOMS.—The symptoms of ergotism may occur at once after eating the fungus, provided the animal gets a sufficient quantity; or they may occur only after the animal has eaten the fungus for some time. Ergot lessens the blood supply, especially in the extremities—feet, tail and ears—the affected parts swell, get cold, a well-defined line usually forms about the part, below which the tissue dies and sloughs off. When the feet are attacked the animal becomes very lame. Ergot causes abortion in pregnant animals, but this must not be confounded with contagious abortion among cattle. Ergot also affects the nervous system, causing trembling of the muscles, weakness, staggering gait, and sometimes convulsions. The digestive system is often affected and there may be purging, indigestion and abdominal pain. Cattle are more seriously affected by ergot than horses.

TREATMENT.—To prevent the disease, do not feed animals hay or grass containing ergot, and when the disease occurs ergot should be withheld at once. A purge of one pound of epsom salts for adult cattle, or a quart of raw linseed oil for horses should be given. Give sloppy, nutritious foods with plenty of drinking water. Bathe affected parts, feet, etc., with hot water, rubbing to stimulate circulation, and apply antiseptics such as a 5% solution of carbolic acid.

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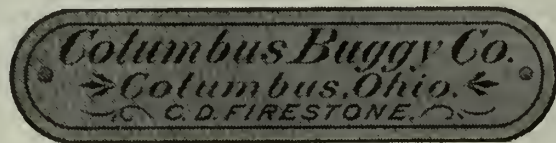
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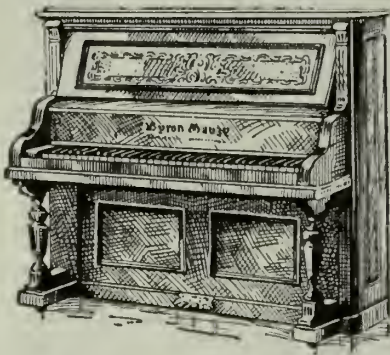
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FRUIT MARKETING

French Walnut Crop.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

The following report on the French walnut crop was written prior to the cable news of Sept. 16th, that additional storms had practically annihilated the crop.

I have the honor to submit the following report from this consular district, based on a personal visit Monday last, August 25th, to the walnut region in the valley of the Graisivandon:

CROP OUTLOOK.—The crop of walnuts this year in the valley of the Isere or Graisivandon will, in the opinion of experts (judging from present appearances) be a comparatively small one—one about one-half of that of last year.

Breeders' Directory.

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The crop is expected to yield about 12,000 bales of dried walnuts, as against double that quantity in 1901, and 4000 to 5000 bales of fresh walnuts, which are exported chiefly to England—16,000 to 17,000 bales in all.

CAUSE OF SHORT CROP.—It would probably have produced 3000 or 4000 bales more had it not been for two hailstorms which visited these regions on the 7th and 13th of August, and which exceptionally were general throughout the valley. The stones that fell were in some cases as large as filberts, and did considerable damage to fruit generally, and especially to walnuts. It may be remarked in passing that the walnut district of the Isere comprises a territory in the lower valley of the Graisivandon, between Tullius and St. Marcellini, of some 10 miles long and 7 miles wide, the nut trees flourishing in the fertile valley on either side of the river, and extending back quite a distance on the contiguous uplands and hills.

MATURITY SEASON.—The later or maturity season this year, apart from the two hailstorms, has been so far propitious, and if nothing of an unfavorable character intervenes between this and gathering time, I judge from personal observation and conference with different experts on the ground that the yield will certainly be not less than the figures I have quoted, and that the quality will be superior.

DATE OF EXPORTATION.—Practically, the crop of dried nuts will not be ready for exportation before the 20th of October to the 1st of November. If shipments go forward earlier, it can only be at the expense of the quality of the nuts, for nuts picked earlier and artificially dried are of necessity always inferior. Buyers, therefore, in their own interests, will do well not to press too early delivery.

PRICES.—Prices will probably rule high at the opening of the campaign, because of attempts at speculation. It is affirmed, in fact, that a Bordeaux party, having recently bought up nearly the whole of what remains of last year's crop—some 3000 bales—is causing reports to be circulated to the effect that he is a buyer of new crop walnuts at a parity of 80 francs per 100 kilos (\$15.44 per 220.46 pounds), although thus far this party has bought nothing and made no contracts. This is possibly a maneuver to enable the party to dispose of his purchase of old-crop nuts to advantage; but it will have the effect, it is said, of putting a high value on nuts of the new crop. No price has as yet been announced for the new crop beyond what I have just stated; the common opinion is that 80 to 85 francs per 100 kilos will be the figure.

C. P. H. NASON,
U. S. Consul.

Grenoble, France, Aug. 29.

The Greek Currant Crop.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

In completing the series of reports upon the currant crop of Greece requested by the Pacific Commercial Museum, there is little to be added except the opening prices of the new fruit. The crop is fully as large, I am safe in saying, as previously predicted—that is to say, some place between 160,000 and 175,000 tons. Accurate figures will probably not be known for some time, since there is much fruit in the drying grounds and a quantity as yet uncut. The quality is normal, probably somewhat above the average, and the rate of retention has been fixed at 20%—the farthest limit of the law.

In my first report I suggested about 10s (\$2.45) c. & f. New York per 112 pounds mean opening price. The market was manipulated in an unexpected manner, however, and the average opening price of 11s 6d (\$2.81) to 12s 6d (\$3.06) c. & f. was reached. As a result, there was a stampede on the part of the growers to market at the earliest possible moment and a consequent panic became imminent. Prices fell heavily and a reaction has set in at this writing. Prices give evidence of becoming more firm—in other words, they will

begin again at about 10s (\$2.45) and may hold their own and advance slightly until the demand of the larger markets can be computed. New markets are being sought, notably in Russia and South Africa, and efforts are being made to extend the American markets. The outcome of these ventures is eagerly awaited in the district. For the new crop the American market has so far shown marked apathy, owing possibly to the supply of old crop which it recently purchased at reduced prices. The opening prices of the principal grades were as follows: C. & f. New York, Vostizza, \$4.87; Gulf, \$4.41; Patras, \$3.92; Meligala, \$3.35; Amalias, \$2.94 to \$3.06; Pyrgos, \$2.94; Provincial, \$2.91; Calamata, \$2.81—all per cwt. of 112 pounds. These prices are for uncleaned varieties. For cleaning and stemming, 1s 6d (36 cents) should be added to the above prices per cwt. It should be noted in conclusion that for the American market, at least at the opening of the season, prices on the higher grades are not taken into account in estimating the average cost, and furthermore that prices are regulated within the average grades according to quality and condition.

FRANK W. JACKSON,
U. S. Consul.

Patras, Greece, Aug. 20.

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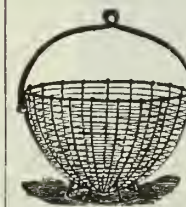
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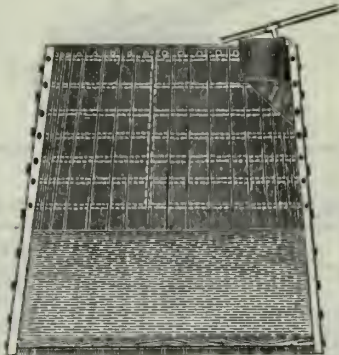
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14-inch or 16-inch.
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THE DAIRY.

Dairy Convention Annual Address.

By HON. P. J. SHIELDS, President California Dairy
Society, at the convention during the State
Fair.

This is our ninth annual convention. We have passed through the years of trial and of experiment, through the forming years, and have grown into a mature body having definite aims, with a mission, and with the developed resources of carrying it out. We now have traditions, can indulge in reminiscences, and occupy a definite place in the great scheme for State development, and of industrial education. There is a distinct need for such an institution as this. We have our Agricultural College of Berkeley; we have our farmers' clubs, farmers' institutes and farm journal. But we need one great central body, well organized and actively attentive to the interests of our great industry. We should in all things advance dairy interests in California, and whenever any question arises we should be able to express the organized voice of California dairymen. I deem it unwise to at this time indulge in any general discussion of the multitude of questions which will come before the convention, as these questions can be most advantageously discussed separately as they arise.

DAIRY PRODUCTS.—I can congratulate you upon a prosperous year just passed. Prices have ruled good and the quantity of butter made this year has exceeded that of the preceding.

The general opinion of those best qualified to judge is that the quality of our butter is constantly improving and that in general dairy conditions we are attaining higher standards. The general and increasing adoption of the creamery plan of butter manufacture is largely responsible for this, but with all of its admitted merits, the public creamery never will, and probably should never, completely supersede the private dairy where all the conditions are under the absolute personal control of the dairyman, and where by the application of scientific dairy knowledge he may make an ideally perfect product. Vast progress has been made in dairy management through the introduction of the creamery method, but the creamery plan will always fall short of realizing its highest development until the management of the several creameries exercises a more thorough supervision over the details of its milk supply and with the strong hand of authority enforces the healthfulness of all cattle; cleanliness of the premises of patrons, and intelligent methods of treating the milk from the cow to the creamery. The creamery management should exercise a paternal control over its patrons; should teach them dairy science and instruct them in the management and breeding of their cattle.

DAIRY PROTECTION.—Since our last session the Grout bill has been passed by Congress, and it will certainly prove of great advantage to the dairy interests of America. It will force a fraud to be sold for what it is, and will relieve the cow from responsibility for masses of unsavory material. We have nothing to fear from competition with any artificial product which is sold without fraudulent representations. We should extend our thanks to our Congressional representatives who aided in the enactment of that law.

Some months before our last meeting Prof. Koch announced that bovine tuberculosis or consumption could not be communicated to humans. This occasioned great discussion, and has resulted in a decided difference of opinion. Prof. Koch is one of the world's greatest authorities, but in a matter of such grave importance we cannot accept his statement without positive proof; and while the scare regulations and legislation of a few years since should not be repeated, it behooves us all to strictly overlook our herds and guard against the sale of products which might even be suspected of the taint of that disease. Dairy products must be kept sound, and the public confidence in their cleanliness and wholesomeness must never be shaken. It is important to

us that dairy products be in demand; it is more important to the world that dairy products enter more largely into its diet, as such foods are the most healthful, nutritious and economical of all known. We should for business reasons and from reasons of public policy encourage their larger consumption and avoid all such conduct as will in any wise throw suspicion upon their wholesomeness or restrict their popularity.

DAIRY EXPANSION.—Notwithstanding the fact that the dairy conditions in this State are unequalled, we still fail to manufacture sufficient butter for home consumption and fall far short of manufacturing sufficient cheese for that purpose. The dairy conditions in this State are so exceptional that they have attracted the attention of all observers and received a favorable and special mention from the dairy division of the Department of Agriculture. Our resources in other directions, however, have been so valuable and have received such marvelous impetus that they have drawn away our attention from a more modest but surer source of wealth and revenue—our dairy interests. I believe, however, that in the near future those products will attain such a development that we will be enabled to supply our home market. It has been a matter of frequent reference in the public press that oleomargarine was being used in some of our Federal institutions and that in one instance a very large butter contract for the use of naval vessels outfitted at Mare Island was awarded to a Kansas creamery. The organized dairymen of California should take action to see that nothing but honest dairy products are used within institutions located in this State, whether Federal, State or county. We should also take action to see that Government vessels being supplied at harbors located within this State should purchase their dairy supplies from the dairy farmers of California.

DAIRY IMPROVEMENTS.—Another matter which I will take sufficient of your time to call to your attention is the unimproved character of the dairy herds of this State. Possessing a citizenship and an enterprise which will compare favorably with the best States in the Union, our general dairy farmer has failed to improve his herd to the same extent as have Eastern dairymen, and far from the extent which our more favorable conditions would permit of. In a short discussion with Prof. Carlyle of Wisconsin, who last week judged our dairy cattle at the Fair, he called attention to the absence in this State of the farmer-breeder, and this is an omission which the most casual observer would detect. Every effort should be made by this body to induce the average farmer to introduce im-

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proved blood into his herd and breed nothing but superior cattle. He should be taught the advantage of it from every standpoint, it being more economic and it resulting in a better product. The breeding of fine cattle has an intellectual, not to say psychic, influence upon the breeder. The excellence which his improvements produce in his herds will elevate his standards and cause him to strive after high quality and excellence in every department of his business. I believe that this body should do something to induce improvement in this direction, and would recommend the consideration of the question of offering a substantial money prize to the creamery patron in this State whose herd shows the largest average yearly butter product, or to offer premiums for butter cows, to be competed for by all breeds or no breeds; the cow to be tested by some one authorized by the board of directors of this association. I believe that an energetic board of directors could easily collect a sufficient fund for the payment of these prizes and that they would result advantageously.

THE ASSOCIATION'S WORK.—Our Board of Directors, shortly after its organization one year ago, undertook to collect statistics from all of the creamery patrons in the State with reference to the product of the different herds according to their breed, with the end in view of determining what particular breed of cattle or grades of such breeds within the State were producing the best results and realizing for their owners the most economic results. For reasons which I have not time here to detail this work has not been completed, but I trust that at the next annual meeting we will be able to present a report upon this question which will be of great value to the dairymen, not only of California, but of the United States, and be a valuable contribution to the scientific knowledge of the world.

Our next meeting will be our tenth anniversary, and we should take steps at this meeting to see that that occasion should be fittingly celebrated. Our session next year should be a marked one. We should see that a great attendance is on hand; that an excellent programme should be presented, and endeavor to give to our society new impetus and a broader usefulness. I could take up with you an endless number of subjects which would be valuable for us to discuss, but leave them to be considered later in our regular order of business. I predict for this session a careful attention and that from it will result value and individual benefit to you who have been so fortunate as to attend and to the great interest which we represent.

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GEORGE BEMENT of East Oakland, the thoroughbred stock raiser, has recently bought of Charles E. Ladd, Oakhill Stock Farm, North Yamhill, Or., a yearling ram, Ladd's No. 129, one of the foremost prize winners at the Oregon State Fair. It was selected by Prof. Carlyle on Mr. Bement's order.

Did you see as complete a list of the awards at the State Fair in any other paper as was in the PACIFIC RURAL PRESS?

Vermont Farm Machine Co.

The contract for building a new machine shop, 60x172 feet, two stories high, with a basement 17x113 feet, for the Vermont Farm Machine Co. has been awarded to E. I. Kilburn of this place. The new shop will be located to the west of the present main building and will add greatly to the manufacturing capacity of the company. The new addition to the main building, 40x60 feet and three stories high, has just been completed. A storehouse four stories high, to be located along the line of the electric road, and so arranged that freight cars can be backed into the building for loading, is a possibility of the near future. It was only last winter that this company built and equipped a handsome new office building. All these changes and additions give the Vermont Farm Machine Co. one of the largest and best equipped manufacturing plants in New England.—Bellows Falls, Vt., Times.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING SEPT. 16, 1902.

709,451.—BAG MAKING MACHINE—J. F. Ames, Portland, Or.
709,191.—ROCK DRILL—R. Avery, S. F.
709,135.—ORE LEACHING MACHINE—J. Brown, Tonopah, Nev.
709,300.—FENCE POST—J. Buchtel, Portland, Or.
708,996.—STEAM TRAP—J. Campbell, Port Blakely, Wash.
709,301.—MACHINE GUN—E. M. Capps, San Diego, Cal.
709,307.—ANIMAL EXTERMINATOR—L. N. Cornett, Natividad, Cal.
709,210.—PUMP WAGON—J. J. Eagen, Oakland, Cal.
709,212.—PUMP—R. W. Elliott, Oakley, Cal.
709,087.—STOVE PIPE HOLDER—J. E. Faulkner, Whatcomb, Wash.
709,400.—ROD COUPLING—J. T. Fitzpatrick, Bakersfield, Cal.
709,405.—WINDOW SCREEN—E. Hipolito, Los Angeles, Cal.
709,153.—GATE—J. J. Hynding, Ferndale, Cal.
709,227.—WOOL WASHING MACHINE—J. Keefe, S. F.
709,333.—BED AND SOFA—L. Krage, S. F.
709,099.—BOTTLE—W. G. Lawrence, Oakland, Cal.
709,338.—CAR COUPLING—W. S. Lennen, Tucson, Ariz.
709,102.—WATER GATE—Martin & Ormand, Riverside, Cal.
709,103.—MASSAGE MACHINE—C. E. Mason, S. F.
709,104.—STAMP MILL MORTAR—W. A. Merralls, S. F.
709,344.—GAS GENERATOR—C. W. Metcalf, Tucson, Ariz.
709,236.—STATION INDICATOR—C. E. Morgan, Portland, Or.
709,028.—PLOW—J. P. Mulroney, Plaza, Wash.
709,370.—OIL BURNER—E. Stewart, Los Angeles, Cal.
709,443.—OIL BURNER—W. H. Stewart, San Jose, Cal.
709,248.—ELEVATING MACHINE—A. P. Tatterson, Stockton, Cal.
709,428.—EXPLOSIVE ENGINE—F. B. Warring, San Jose, Cal.

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Because they know that they will have one then that possesses more of the qualities that go to make up a perfect cream separator than any other make.



That the U. S. Skims Cleaner is an established fact, it having proved its superiority in this point at the Pan-American Model Dairy, where it made the **World's Record of .0138** for an average of 50 consecutive runs, which has never been equalled by any other make of separator in the world.

That the U. S. is more durable is being shown daily in dairies all over the country by those who have used other makes, but who are now using the U. S.

That the U. S. is more simple is easily seen by everyone who has eyes.

That the U. S. is the safest, with its gears all enclosed, everyone can understand.

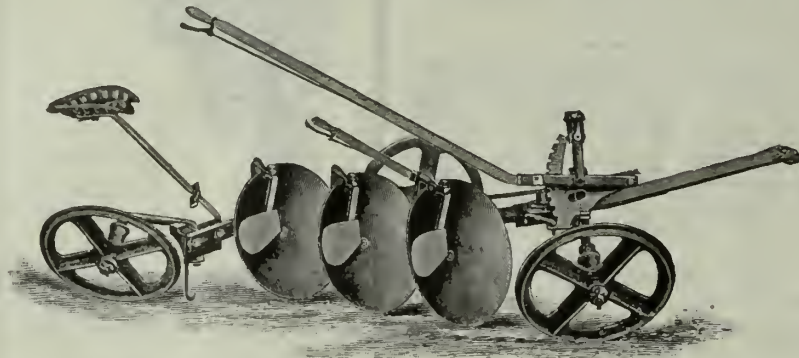
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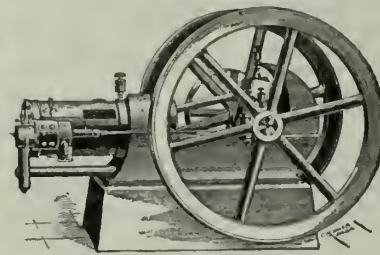
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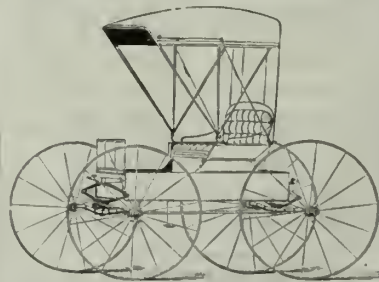
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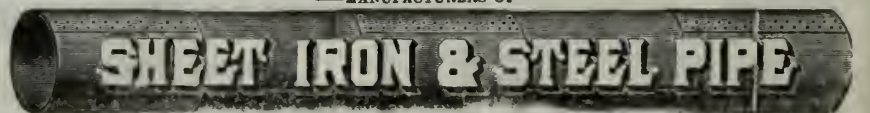
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 15.

SAN FRANCISCO, SATURDAY, OCTOBER 11, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

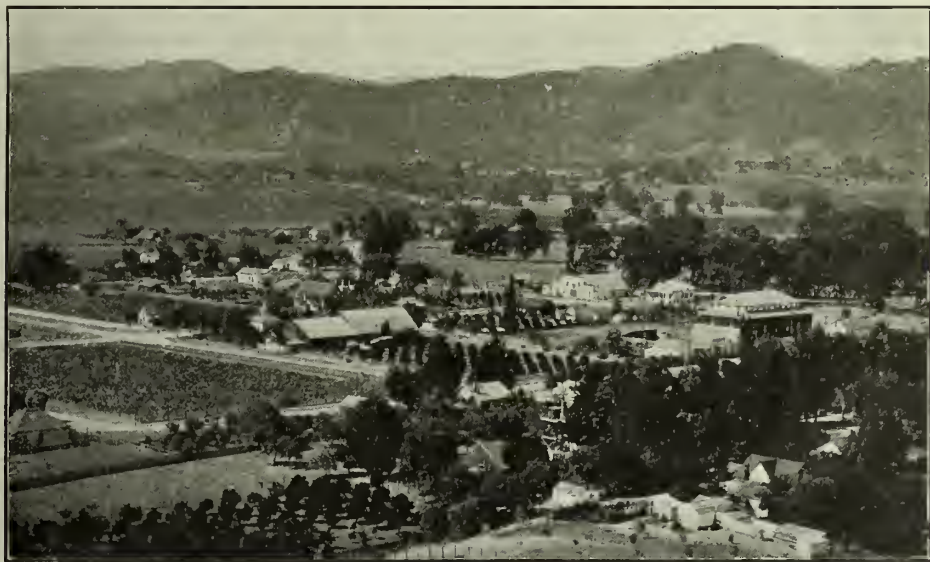
In Northern Sonoma.

California is full of picturesque country. In many parts of the State the towns, and the productive agricultural lands as well, are environed by land and water scenery of most charming description. Of course, we have ocean, mountain and lake scenery which delights the tourists and the residents who seek such grand features in their leisure or recreative travels, but beyond things which have to be sought by journeys of greater or less length, we have also a picturesqueness right at home in nearly all parts of the State which is cheering and elevating to all of us even in the midst of our pressing vocations. We cannot but think that life is more worth the living where the eyes can frequently be uplifted to the everlasting hills or directed across stretches of ever-changing water than where one can only seek in the sky, glorious as it is, relief from the monotony of the plain. The endless variety of the California scene charms, uplifts and edifies.

Out of the throngs of charming scenes which are at command we select two this week of which our readers have often heard, but which have not figured in our illustrations. They are situated in the Russian River valley, which for variety of products, qualities of soil, characters of climate, desirability for residence and the like has been famous from early days. This valley occupies the northern portion of Sonoma county—a county of thrifty towns, diversified products and well-



Russian River Valley, Healdsburg and Fitch Mountain.



Cloverdale, in the Citrus Belt of Sonoma County.

founded prosperity. In another column this week we have a sketch of the poultry industry of the Petaluma district, which lies at the south end of the county on the bay of San Francisco. Northward through the broad and rich Santa Rosa valley, which takes its name from the city which is the capital of the county, the main avenue of travel, which is the well-equipped and operated California Northwestern Railway, proceeds to the Russian River valley at Healdsburg, of which a charming view is given with the river flowing through the center. There is a very wide area of rich river lands which the picture only suggests. Farther away is the town nestling among the trees, while in the background rises Fitch mountain. Healdsburg is the commercial center of a very rich farming country. Still farther north, passing a number of thriving settlements including the famous Asti vineyard enterprise, the traveler comes at length to Cloverdale, which is picturesquely located where the valley narrows in to receive the river as it emerges from its beautiful canyon through which the railway passes to Mendocino county and beyond. Cloverdale is an old town of fair

fame for ample heat, which has during recent years been taught to sweeten oranges and to furnish forth citrus fairs which, held each winter, have attracted much attention.

A Fine Block of Nursery Trees.

How well-grown apple trees look in the nursery rows is finely shown in the accompanying picture from a photograph taken on the grounds of the Oregon Nursery Co. at Salem. In early days Oregon nurserymen contributed large supplies for the establishment of fruit growing in California—in fact, the first grafted trees ever sold in California came from our northern sister State. At present the two States are drawn very close together horticulturally by the very extensive and enterprising operations of the Oregon Nursery Co., whose scope and methods are given in detail upon another page of this issue. This company not only grows trees on its home place in Oregon, but has several growing centers in various regions in California, where the local climates favor particular kinds of stock which enter into their widely extended trade. There is much in nursery operations which should interest the tree planter, and the glimpse at a large acreage of good stock will no doubt be acceptable to many of our readers.

ANOTHER promise of diversification in the Sacramento valley is found in the growing disposition of wheat growers on a large scale to do more in stock raising. A number of prominent ranchers have announced their intention to that end, the latest being C. Compton of Glenn, who for so long farmed the big Murdock property. Though there are indications of improvement in the wheat industry, it is felt that the increased yield in Oregon, Washington and Manitoba make the future unattractive.



A Fine Block of Apple Trees at the Oregon Nursery Co., Salem, Or.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, October 11, 1902.

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The Week.

Beautiful weather delights everyone. The idle bask in it; the busy bustle in it, and both achieve the utmost of their kind. "Possible showers" have submitted just enough evidence to justify the weather prophet by dropping very lightly upon the northwest verge of the coast region. Everywhere else there have been beautiful cloud displays and cooling autumn mornings, without any saturated property as a rebate to their delights. Consequently streams of politics and production have flowed steadily on and all are content. The newcomer who wonders why the promised September rain did not come must be assured that the old Californian prefers a season in which such early refreshment is either very light or absent, and in which more tardy beginning of the rainy season is followed by a surer sequence. When the fruit is all in, the grain out of the field or off the river bank, the dry feed all eaten—then let the rains come fast and furious until the soil is wet deeply enough to prosper all cultural purposes. This seems to be this year's program, and, if so, there will be many happy people in California.

Spot wheat has held values well and full prices are being paid in the country. In the city options have oscillated, and, though better to-day than a little earlier, they are still a point lower than a week ago. Five ships carrying grain have gone out: one full wheat to South Africa, one full barley to Cork, two mixed to London and one mixed to Cork—Cork destination being for orders on arrival, of course. About \$50,000 worth of flour has also gone out—making about \$400,000 for the week in grain and grain products. Barley prices are about the same as last week, with options weaker, however. High-grade oats are firmer and rye has gained another advance. Corn is scarce and high. Beans are rising rapidly—large white having advanced 1 cent per pound, and this makes the whole bean line stronger. All millfeeds are unchanged and stocks light. Hay is the same as before, both in price and holding. Beef and mutton are tolerably firm and unchanged, while hogs also hold, though in freer supply, because lower bids are refused. Butter is quiet and concessions are reported even on fine grades to secure movement in the face of the strong push of stored butter. Cheese is in healthy shape, rich and mild cheese selling high; there is also an advance in cheese at the East. Eggs are all prices; fancy fresh are very high, but there are few sales, cold storage and Eastern eggs going freely. Poultry is slow and dragging for all but fine, large, fat stock. Potatoes are quiet; few come but the demand is even less. Onions are slow at old

figures. Wine grapes sell well if of good quality; table grapes are also doing well—with seedless in the lead. Fine apples are scarce and wormy plentiful. Oranges are doing little; lemons are quiet and steady and limes have advanced. All high grades of dried fruits are strong—particularly apricots and peaches. Prunes are slow unless large. Raisins are moving, although large buyers do not yet go much beyond the holiday trade in their orders; they seem to be hoping for something on the outside. Almonds sell steadily at current rates and walnuts are going above Association figures, apparently, in some cases. Honey is as before and supplies light. Hops are unchanged, but dealers are not buying. Wool sells readily if at all satisfactory in quality.

It seems from all that is said that the prune warehouse at Santa Clara, built with the growers' money, has been taken in at about half price by a group of local capitalists who were enterprisingly awake to make good use of their money. How much of this has been deliberately planned for we do not know, but it is clear enough that there are people in the district who know how to hold their hats when things are falling. The outcome of it all seems to be that all growers had to contribute something to pay for what is now a private corporation with a cut-rate outfit which it will probably find very profitable. The ill lies in the fact that distant producers have been frozen out. The fact that they expected to be and did not approve of contributing to a thing from which they had little chance of securing benefit may lessen the disappointment. The lesson is, however, clear; prune producers must combine in their own districts, provide their own outfits and strive for proper rewards for their own products. We see no other practicable method of meeting present obstacles.

As we go to press Wednesday the State Grange is in session at Sacramento. The opening day, Tuesday, was largely given to addresses of welcome, appointments of committees, reports of officers, etc., and in the evening a great reception was given in the Crocker Art Gallery, during which a number of spirited and pertinent addresses were made. On Wednesday the daylight was given to an excursion to Folsom and the evening to business, which will continue resolutely to the end of the session. It is stated that the attendance is unusually satisfactory and that much desirable legislation may be effected, as later reports will show.

The havoc wrought this year by cyclones in western Europe is simply appalling. In one valley of France there have been four during August and September, and they have practically destroyed this year's walnut crop, as we have already advised our readers through cablegrams. The details which come by mail through the Pacific Commercial Museum show how destructive these storms were. Writing from Grenoble, Consul Nason says:

In the space of twenty to thirty minutes the ground was covered with a layer of hailstones nearly 3 inches in depth. Some were of the size of hens' eggs, the largest weighing nearly half a pound. They were driven as from a mitrailleuse, breaking tiles and glass in the towns and demolishing all standing crops in the country. The path of the cyclone was strewn with leaves, broken branches, ripening grapes and fruits of all kinds. In many instances the trees and vines were almost stripped of their leaves and vegetation generally presented a withered aspect. The growing crop of walnuts was practically annihilated. The output, which before the storm was estimated at about 12,000 bales, will now, it is thought, barely exceed 2000 bales, of which the greater part may be shipped to England as fresh nuts.

Other parts of western Europe have also suffered very severely this year. It is not wonderful that the most zealous efforts are now being made to break up the cyclonic action which culminates in such destruction. The savants still have high hopes of doing it by systematic cannon firing, and some results look promising.

Professor G. W. Shaw of the University of California, Berkeley, is inaugurating some investigations to ascertain the exact facts as to the reports which are constantly heard concerning the impossibility of using beet sugar satisfactorily for canning purposes. He would be pleased to hear from parties who have experienced difficulty which they suppose has arisen from this cause. The object of the investigation is

first to ascertain if there is any real reason for the statements made concerning the subject, and if so, to endeavor to ascertain what causes it may be due to. Correspondence concerning the subject may be addressed to Professor Shaw at Berkeley.

The short courses in agriculture, horticulture and dairying at the State University were formally opened on Wednesday morning and will proceed during ten weeks. The enrollment will be between fifty and sixty, not including the students already in the University who may take some of the work. This gathering of people from all parts of the State to give such time as they can spare from pressing duties to systematic study of farm topics is very interesting and promising. Many of the attendants are of mature years and much experience. They do not feel too old to learn and they wish to be up to date.

QUERIES AND REPLIES.

Flax Growing in California.

TO THE EDITOR:—Please give information about flax growing in California—the acreage, location, quantity of straw per acre, quantity of fiber to the straw, and how flax grown in California compares with that of other countries as to length, strength and color.—INQUIRER, San Francisco.

We regret that we have no definite statistics concerning some points of this inquiry. The census of 1900 shows 900 acres in flax, making a yield of 12,610 bushels. Production has somewhat increased since then: the crop being chiefly grown in Yolo and Solano counties. Attention has been given to the utilization of the fiber thus far chiefly by inventors and promoters of companies with fiber protection in view. There are, however, some interesting facts arrived at by experimentation at the University. We have no data derived from actual manufacture. It is, however, perfectly true that flax fiber grown in California is superior in strength and length. The color, too, is beautiful, light and superior. Occasional efforts have been made during the last twenty-five years to establish the manufacture of linen fabrics in California by those claiming to be practically acquainted with the industry elsewhere; but the proprietors of such enterprises have abandoned the undertakings because of the alleged lack of interest among local capitalists. Whether this is the true reason for the failure to establish flax spinning in this State or not, we do not pretend to state.

It has been frequently stated that the production of flax for both seed and fiber is not feasible, and our farmers who have grown flax for seed have therefore abandoned the thought which has frequently arisen in their minds of gaining something for their flax straw as well as for their seed crop. It seems likely that an erroneous impression has thus been engendered, for there are recent authoritative statements to the effect that not only is the production of both seed and fiber from the same plant not impracticable, but that by far the larger part of the flax grown the world over is for the double crop and double profit of both the seed and fiber.

It is possible, then, that even in growing flax for seed, as now practiced in this country, the fiber could be made a source of income, provided the straw was not disintegrated, as in the prevailing mode of thrashing. It is also possible that by selecting a better variety of flax than commonly grown for seed, and by sowing more thickly, so that the growth of the lateral branches on the main stem is measurably repressed, there might be secured a fiber product vastly better than is now obtained, and therefore fitted for a higher class of manufactures. This procedure might result in a lessened production of seed by the individual plant, and perhaps a reduction in the aggregate yield per acre; in fact, in our experiments with flax varieties, we find that the best European fiber varieties yield much less seed than the variety commonly grown for seed in this State.

It may be concluded, then, that though to grow flax both for seed and fiber requires closer thought and greater effort than are usually given to the flax crop, and that to make the straw available to manufacturers requires some investigation and investment on the part of the flax grower, the current claim that one cannot grow flax for both seed and fiber is not necessarily true in the nature of the case, nor in

the experience of the greater number of the flax growers of the world.

In order to minister to the oft-recurring demand from inventors for California-grown flax straw for trial in their machines and processes, and to furnish seeds to growers who desired to experiment, the University secured from Europe, years ago, four of the best fiber flax varieties, and have grown them from year to year on the experiment grounds of the Berkeley station. They have attracted much attention from visitors for their beautiful, straight, tall growth of stem, and bright, clear color. The growth of the four varieties has been quite similar, as shown by the record of growth:

Variety.	Sown.	Germi-nated.	Bloomed.	Har-vested.
Russian	April 12	April 23	June 5	July 24
Yellow seeded	April 12	April 23	June 2	July 24
White flowered	April 12	April 23	June 2	July 24
Royal	April 12	April 23	June 5	July 24
California	April 12	April 23	June 10	August 4

The European fiber varieties are thus shown to require a shorter growing period than the California seed variety. The fiber varieties averaged one-third longer in straw than the Californian; they branched less and produced much less seed. Though these flaxes have aroused considerable interest here in the manner stated, there has been no result in local fiber treatment that is worth mentioning. Seed was sent to Washington and straw grown there was sent to European flax manipulators, who returned a very favorable report. A few years ago a lot of flax was sent from the University to an inventor in New York who had a process for cleaning flax without first submitting the straw to the process of retting, thereby obtaining the fiber at once. The following is a condensed tabular statement, which we compile from the data furnished by this inventor:

Variety.	Gross Weight.	Seed.	Straw.	Fine Fiber.
Yellow seeded	19	7	12	2½
Russian	16	6	10	2½
Royal	15	6	9	2½
White flowered	15	7	8	2
California	14	7	7	1½

Comments upon the experiments are, that the Russian and Royal seemed to be best, both for seed and fiber. The California gave much the larger yield of seed, and the seed was very large and plump, but the fiber was coarse and weak.

The natural color of the straw was very light; that of the fiber almost perfectly white in each sample. The total yield of the fiber, 23% of the weight of the straw, was rather a light yield of fiber, but very fine. The yield of fiber is greater when the straw is not overripe. The samples treated had been allowed to get riper than required for either seed or fiber.

The results of this trial are of interest as showing clearly the superiority, from a textile point of view, of the flax varieties which the University introduced to this coast over the common variety which is grown for seed. Whether it is possible to realize more by the attempt to produce both seed and fiber here, and to substitute one of these varieties for the one commonly grown, is an industrial question depending upon manufacturers and capitalists for solution. The farmer cannot afford to produce a crop of any kind until a market is assured.

Education and Experience.

TO THE EDITOR:—Are there courses in your State University which can be taken advantage of by one who may be obliged to give up office work and seek an outdoor life in raising fruits, etc.? My plan is, if unable to continue office work on account of nervous impairment, to try your climate for awhile and make a study of fruit growing, etc., with a view of investing in some pleasant place where a living can be made after residing long enough to know something of the country and the new line of work. Can you give me an idea whether or not the plan is feasible and whether such knowledge when obtained can be made to yield a living? It will be greatly appreciated. I am 44 years of age and not strong enough to do much physical work. Is there a chance to make a living by the investment of a few thousand dollars after studying the subjects at the University.—READER, Colorado.

During the second half year at the University, which will begin Jan. 14, 1903, instructions will be given in California fruit growing, in insects and plant diseases and in other subjects, which will be directly important to those contemplating fruit growing in this State. The amount of time required for these special branches would not overtax your strength and would give opportunity for migrations into the

fruit growing districts for local study of conditions interesting to investors. Such instruction would be valuable in a suggestive way and perhaps prevent a newcomer from making some mistakes, but it could hardly be considered a surety of success in the practice of fruit growing or other farming, because farming is a business which requires full training and experience just as other pursuits require them. This fact is too often lost sight of and some people are disappointed because they find investment in a small way by those who are forced to hire all the labor necessary not as productive as they expected. It really requires a good deal of knowledge and energy to successfully develop a fruit property and success is rendered more sure by reduction of outlay for labor. A strong man can secure a margin by doing things for himself which might not be realized by one dependent upon the help of others. There are, however, many cases in which people incapacitated for office work have found themselves so much improved by the outdoor life in California that they are able to do more than they anticipated and have succeeded in securing a very satisfactory income from comparatively small investment. It depends very largely upon the man and it is difficult to give advice which would be generally safe and applicable.

Plant for Terrace Banks.

TO THE EDITOR:—What plant can you commend for the banks of terraces, which will give a good appearance with little care or watering?—SUBSCRIBER, Mill Valley.

The most available plant which we find for covering dry banks in Berkeley is the English ivy. At the University they planted a great deal of it in such situations four or five years ago as an experiment and have been gratified with the way in which it covered the exposed surfaces and maintained its green with a minimum of moisture. There is no grass known to us which maintains so good appearance summer and winter and is otherwise so satisfactory—in this part of the State at least. There is a plant called the Fogfruit (*Lippia modiflora*) which is highly recommended from Arizona and which was fully described in the PACIFIC RURAL PRESS of September 6. It has proved a very persistent plant in dry places. The roots of this plant will be offered by the University in the distribution which will be announced during November and it might be desirable for you to try a few plants, but for your main purpose we think the cuttings of English ivy put into the ground 5 or 6 inches about this time of year, or after the first rains come, would be best as a main reliance.

Pock-Marked Japanese Plums.

TO THE EDITOR:—I send several plums which have small pits or depressions on the sunny sides while the other parts of the fruit is smooth and plump. What is the cause of it?—READER, Santa Cruz county.

The plums do not show any actual disease. The blemishes are difficult to account for, although there is reason to believe that they may be due to some action of the sun upon the fruit when it was much smaller. There seems to have been blisters formed and growth stopped at those points. The after-growth of the fruit raised the unaffected surface naturally and left these blisters in the form of pits or depressions. Of course it is possible in the absence of demonstration that this is the cause, that it may have been due to some other agency which cannot now be determined. It would be desirable to watch the fruit next year to detect any injury appearing earlier in its growth, for at that time it might be possible to reach more definite demonstration of the cause.

Stable Manure for Orange Trees.

TO THE EDITOR:—I am told that in the south they use stable manure on orange trees every third year. Can it be used to loosen up the soil without affecting the rind of the fruit? The trees are planted in clay land, with hardpan very near the surface.—C. CAULFIELD, Sacramento county.

Yes, stable manure will have a very good effect in making a heavy soil more friable. It will also add to its humus and its content of plant food. If used to excess it may make coarse, oversized and puffy fruit, but how much amounts to an excess depends upon the local soil, drainage, etc. You are quite safe in using it, watching results and continuing according to such observation. Some growers at the south use immense quantities without injury and with manifest advantages.

A Self Sucker.

TO THE EDITOR:—I have a fine young Jersey heifer calf. Can you tell me of something I can do to stop her from nursing herself.—E. D. TURNER, Isleton.

So far as our observation goes bitter applications to the teats and nose boards on the head are not altogether satisfactory. A harness composed of a headstall and a strap around the body just back of the forelegs with a light slat on each side connecting the two, makes it impossible for the cow to reach around. Self suckers have, however, to be pretty good to make them worth keeping.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 6, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The temperature was nearly normal during the week and conditions were generally favorable for fruit picking and drying. Prune curing and wine making are progressing favorably. Almond harvest is nearly completed. Grapes are yielding a large crop in all sections and heavy shipments continue. Special reports on the apple crop have been received from many correspondents, indicating that in the foothill districts the yield is somewhat above average and the quality very good; the hot weather in September slightly damaged the fruit in some places. Oranges are in excellent condition and prospects continue good for a large crop. Hay baling is nearly completed. The dry seeding of summer-fallowed land is in progress in the vicinity of Wheatland.

COAST AND BAY SECTIONS.

Generally clear and warm weather prevailed during the week, with cool nights. Frosts in portion of Lake county September 25th and 28th injured beans and corn on low lands, but no damage was done to grapes or other crops on the higher lands. Forest fires are causing considerable damage in the northern districts. Grape picking is progressing; the crop is large and of excellent quality. Apricots, peaches, pears and prunes have yielded excellent crops in most places. Pears and grapes are reported light in portions of the Santa Clara valley. The apple crop is above average in most sections, but the codlin moth is causing considerable damage. Citrus fruits are in excellent condition. Bean harvest is progressing rather slowly. Hop baling and hay baling are in progress. Showers to-day (Monday) will benefit pasturage.

SAN JOAQUIN VALLEY.

Clear, warm days and cool nights prevailed during the week, and conditions were generally favorable for raisin making and prune drying. A large part of the first crop of raisins has been secured and the second crop is being rapidly gathered; the yield is reported heavy in all sections. Immense quantities of grapes are going to the wineries, which are running to their full capacity. The prune crop is unusually heavy and much of it will be lost owing to scarcity of labor. Figs are being shipped. Oranges are looking well and a good crop is probable. Potato harvest is in progress and there is a large crop. Pasturage is scarce, but there is an abundance of good hay, and cattle are in good condition. Plowing and seeding are in progress.

SOUTHERN CALIFORNIA.

The weather was generally clear and warm during the week, with cool nights. Grape picking and raisin making are progressing rapidly. The grape crop is reported unusually heavy and of good quality. Wine making is in progress. Apples and pears in San Diego county are above the average in yield and quality. Citrus fruits are in good condition and a heavy crop of oranges is probable. Walnut picking continues. Bean harvesting and sacking are progressing and will not be completed for about three weeks. The celery, cauliflower and cabbage crops are doing well. The water supply is sufficient.

LOS ANGELES SUMMARY.—The deciduous fruit crop is about harvested; in some localities a few peaches are still being dried. Grapes are ripe and going to the wineries in large quantities.

EUREKA SUMMARY.—Late crops continue doing well. Apple picking is progressing rapidly. Some orchardists in the Mattole section have done much good in eradicating San Jose scale. Showers are benefiting pastures.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, October 8, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka .....	.04	.41	4.29	2.34	78	46
Red Bluff	T	T	1.93	1.13	88	48
Sacramento .....	.00	.56	.66	.66	84	50
San Francisco .....	.0	T	.82	.69	76	50
Fresno .....	.00	.00	.58	.48	88	48
Independence .....	.00	.29	.77	.40	80	42
San Luis Obispo .....	.00	.28	.38	.84	76	44
Los Angeles .....	.00	T	.12	.32	78	50
San Diego .....	.00	.90	.06	.23	70	56
Yuma .....	.00	.11	.22	.79	96	52

HORTICULTURE.

Blooming Season of Apple Varieties in Los Angeles County.

By SECRETARY MASKEW at the recent meeting of the Los Angeles Apple Growers' Association.

At a meeting of the members of this Association held at Long Beach on Feb. 15, 1902, the question of the "pollination of apple flowers with regard to the setting of fruit" was brought before the meeting. In the discussion which followed it developed that no one present was able to give any fairly accurate information regarding the blossoming season of the leading varieties of apples grown in the different parts of this county.

The necessity of having such a record, as a guide for future planting, being apparent, an apple grower in each district was requested to keep a record and send in a report. The following is respectfully submitted as a report of the blossoming time of the different varieties grown in Cerritos:

	First Bloom.	Full Bloom.	Fall of Bloom.
W. W. Pearmain.....	4-11	4-27	5-5
Red Astracan.....	4-17	4-30	5-12
Belleflower.....	4-20	4-30	5-16
Fall Pippin.....	4-20	5-5	5-15
Rhode Island Greening.....	4-20	5-5	5-15
Kentucky Red Streak.....	4-20	5-10	5-20
Early Harvest.....	4-21	5-6	5-12
Shockley.....	4-27	5-15	5-20
Fameuse.....	4-27	5-15	5-20
Ben Davis.....	4-29	5-15	5-23
Winesap.....	5-5	5-16	6-1
Yellow Transparent.....	5-5	5-16	6-1
Nonesuch.....	5-7	5-16	6-1
Missouri Pippin.....	5-10	5-20	6-1
Alexander.....	5-15	5-25	6-1
Smith's Cider.....	5-15	5-25	6-6
CRABAPPLES—			
Transcendent.....	3-30	4-7	4-22
Hyslop.....	4-11	4-22	4-30
Montreal.....	4-16	4-24	5-7

3=March, 4=April, 5=May, 6=June.

The practical point of cross-pollination is this: There are certain varieties of apples which on account of their profitability we wish to grow largely for the general market, but we find that their productiveness is very materially reduced when planted alone.

White Winter Pearmain, Yellow Belleflower and Missouri Pippin are the standard commercial varieties grown in the moist bottom lands of this county. With a view to selecting good pollenizers for these three varieties the following tables have been prepared:

Length of time in bloom with Pearmain: Astracan, 18 days; Belleflower, 15 days; Fall Pippin, 15 days; Rhode Island Greening, 25 days; Kentucky Red Streak, 15 days; Early Harvest, 14 days; Fameuse, 8 days; Ben Davis, 8 days.

Length of time in bloom with Belleflower: Pearmain, 15 days; Fall Pippin, 25 days; Rhode Island Greening, 25 days; Astracan, 22 days; Early Harvest, 21 days; Kentucky Red Streak, 26 days; Shockley, 19 days; Fameuse, 19 days; Ben Davis, 17 days.

Length of time in bloom with Missouri Pippin: Nonesuch, 22 days; Winesap, 22 days; Smith's Cider, 17 days; Alexander, 17 days.

In considering the above tables it must be borne in mind that the comparative blooming of varieties is more or less a local problem; weather conditions and also soil conditions during the blooming season may not only hasten or retard the time of blooming, but also disturb the order in which the different varieties open in the same locality. Improvement not only of quantity but also of quality by cross-pollination is no longer a theory; it is an established orchard practice, and while the above list of dates indicates in a general way which of our standard commercial varieties may be expected under ordinary conditions to bloom together, each orchardist should learn how varieties bloom in his own immediate neighborhood and be prepared to make minor corrections before planting them for cross-pollination.

DISCUSSION.—In the discussion that followed, Mr. Maskew stated that he had omitted any record of Newtown Pippins, as they are a comparative failure in Cerritos. Delaware Reds are unsatisfactory as a market apple. They are subject to two kinds of fungus diseases, but this year they have been freer from this than usual. The profitable apples are the Belleflower, W. W. Pearmain and Missouri Pippin.

Speaking of pollenization, J. W. Mills, of the Pomona Experiment Station, stated the presence of bees was the most potent pollenizer. Put up a glass on the windward side of a tree, place sticky material on the glass and you'll find plenty of pollen on it. The condition of the trees, however, has much to do with the vitality of the pollen. If a tree is in poor health the pollen is weak. Cross-pollination alone will not produce a crop of fruit. Cultivation, irrigation, pruning, etc., are all essentials.

President Ward said: White Winter Pearmain needs pollenizing. It is adapted to our heavy lands. Picking up the Pearmain in my orchard, nine out of

ten are seedless except in cases where another variety has been in close proximity, when the usual number of seeds will be found.

Mr. Maskew: If we don't look out we will have the same experience with the Pearmain they had in Missouri. Not very many years ago this was the most profitable apple there; now they are practically unknown. The trouble was a fungus disease. It is now more subject to disease than any variety we have. It is our most profitable apple.

Three varieties of apples were presented by Mr. Maskew as desirable—Canadian Nonesuch, a dessert apple of fine appearance, ripens in September, a thrifty tree and good bearer; a red apple, a Western type of the celebrated Fameuse or Snow apple that was almost perfect in flavor and texture; and the Yellow Transparent.

English Walnut Growing.

By DR. E. F. GREENLEAF at the Santa Ana Farmers' Club.

The most important probably of our first labors will be the selection of nuts for planting. To do this you must go to the orchard of some one who has the kind of nuts required and select the finest and largest he has, and this will probably be from two or three trees from each acre in bearing. The cost of the nuts must not be taken into consideration, for few men will allow you to take their choicest product without paying an extra price, and if you have to pay 50 cents per pound for what you need in the way of seed nuts it will be money well invested. Of course, if you can secure the same nuts for less, and probably you can, so much the better for the man investing.

HANDLING THE NUTS.—After securing your nuts have them well cured in the shade, being careful not to let the rain fall on them or the sun shine directly on them, for if you do they are liable to crack open sufficiently to admit ants to the kernel and they may soon destroy the germ, for they are as fond of the meat as is the human family. I have used two ways in propagating the nut. One is to plant the nut as you would potatoes early in the spring in rows 6 feet apart and 2½ to 3 feet distant in the rows. This should be done in land that is of a sandy loam on the surface, and in the best condition of tilth. I would also advise dropping a grain of corn occasionally in the row to mark the same, for sometimes the weeds get the start and it will be required to cultivate the rows before the nuts get above ground, so by following the rows of young corn there is no danger of injuring or rooting out the nuts.

Another plan I have followed and I consider the best if only a few hundred nuts are to be germinated, and that is the layering process. I usually take a box, say, if for 400 or 500 nuts, large enough to hold one-fourth of them as thick as they can be placed side by side and about 8 or 10 inches high, make auger holes in bottom of box or knock off the bottom boards and place on porous ground, fill box one-fourth full of sand, then place a layer of nuts as thick as they will lay, after which sift on top of them about 2 inches of sand. Then make a second layer, filling with sand evenly till all are covered, then a layer of nuts and then of sand till you have finished, leaving a layer of sand on top 2 inches deep, after which turn water on till thoroughly saturated, afterward keep your nuts and sand damp, but not wet, when, in about four weeks, you will find many, if not all of them, started. Now if you find them throwing up spikes, or rather a spike to each nut, you can plant them in rows where you want them in the nursery, say 6 feet by 3 for thrifty stock. I would then be ready to plant my orchard, for I find trees planted at three years of age from the nursery the best, for they will make as fine a tree taken then as if transplanted at one or two years from the nursery, while your orchard land in the meantime may be utilized for other crops, and by the way, I have transplanted trees four, five, six and eight years that have made good trees and are now as thrifty as any I have, many having borne nuts in nursery before transplanting.

TRANSPLANTING.—In digging the nursery stock for your orchard you will do well to run a deep furrow on one side of your row as deep as can be plowed with one horse, throwing the dirt from the trees. This will save much labor and time. Take a sharp shovel and finish, digging down as far as necessary to the bottom of the stock, which is below the lower bulb of enlargement of the root, cutting off, if necessary, the small root below the enlargement, after which run your shovel down on the opposite side, cutting any small side roots, pulling the tree over towards the furrow and pressing it from its attachments to the earth, raise the tree carefully and place under cover of a wet cloth, or place another together in a hole and cover the roots lightly with moist earth.

I would like to proceed and tell you how to select your ground to lay off the same. Dig the holes and place the trees in the holes, but this you will learn and probably already know. But I will say, I would choose a flat or level piece of land, sandy loam surface, with a heavier land for the subsoil, where the surface water does not come nearer than 7 or 8 feet from the top of the soil.

DISTANCE.—If the soil is choice walnut land, rich

and deep, I should say plant 50 feet apart each way, and unless you intend staking each tree lean it a little to the southwest, the direction from which the coast wind comes in this valley. In other valleys lean a little toward the prevailing summer winds.

CULTIVATION.—As to the cultivation of your nut trees, do not be afraid of cultivating too much or of plowing too deep. I will only say do not run your plow into the large side roots of your trees within a foot of the base, or injure the trunks with the single trees, for I am of the opinion, half if not all of the so-called black knot is caused by wounds of the trees by the point of the plow or gnawing the roots near the trunks by gophers.

IRRIGATING.—Give your orchard a good soaking in the winter months, by means of water from the irrigating system, unless the winter rains are sufficient to wet the land to a depth of 6 feet. Another important thing is, do not allow your trees to suffer for lack of water during the summer season if you find the leaves drooping, turning yellow and many dropping. Something is wrong, and nine times out of ten it is need of more water, for if taken in this condition and giving a light irrigating all will be right in a week, the leaves stop falling and you will probably be able to gather your nuts without having to rake off the leaves to find them.

SUNBURN.—With sunburn on the sides of trees (so-called) I doubt much whether the sun has anything to do. We first see a black spot on the trunk of the tree, usually on the south or southwest side, sometimes at any side of the tree trunk, or the large limbs. The black spot continuing to enlarge will cover the side of the tree, cause the bark to crack open from which will ooze a part of the sap, running down many times to the ground, discoloring the bark as it goes and seemingly injuring it also, until finally the whole side of the tree is affected and the bark dies and falls off, leaving a part of the solid wood exposed, which may be finally covered with new bark, or decay may follow. I believe most of this trouble is caused by the tree becoming too dry and then irrigated or allowed to stand after irrigation without cultivation, leaving cracks around the tree, where the moisture evaporates quickly and the tree is left in a dryer condition than if left alone and unirrigated. In other words, leaving the soil around the tree very wet or very dry a number of times during the growing season.

WALNUT DISEASE.—Spot on nut, or walnut disease, is a trouble that confronts the walnut grower more than anything else at present, but if we will spray our walnut trees with the San Jose scale wash it will diminish the disease.

In regard to the so-called sunburn or clogging of the bark, find the beginning of the trouble, chisel out the colored bark and you will find the black sap to flow freely. Remove the diseased bark, apply a cream made of asbestos paint dissolved in water, and if done early your tree will be saved. I presume any other paint would do as well, but only tell you what I know by experience.

ENTOMOLOGICAL.

Fighting the Codlin Moth.

By MR. A. S. ROWE, of Downey, at the Southern California Apple Growers' Convention.

Perhaps the insect that causes the apple grower more loss than all others combined and taxes his ingenuity most to subdue, is the codlin moth, for they not only infest his apples and pears but also his peaches and other fruit. There has been a great deal written by different persons regarding this insect, and we have the experience of eminent authorities, such as Prof. Slingerland and others, regarding its habits. Nearly all of them, I believe, claim that the moth deposits its eggs early while the fruit is just forming, and there are but two broods; they also advocate early spraying only.

IN SOUTHERN CALIFORNIA.—No doubt these gentlemen's statements are correct as to the locality wherein they made their investigations, but it is to be regretted that their statements regarding the codlin moths' habits are not correct when applied to southern California, and are misleading. It is but natural to suppose that the habits of the codlin moth differ somewhat in different climates and conditions. Therefore it is essential that we should know just what its habits are in our own locality, in order that we may cope with it successfully. Having this in view I began an investigation on the 25th of last December. I find that the codlin moths appear here about a month earlier than they did in the State of Washington, where I studied the habits, and they continue to breed about a month later than they did there. The larvae, also, are much more inclined to seek a place of shelter or some hiding place; majority of them seek the calyx to enter the fruit. The latter fact I attribute to the cool nights and the presence of so much moisture, the dew and fog. Instead of the moths all appearing early in the spring, as many suppose, their appearance extends over a period of more than three months, beginning about the first of March and extending to the latter part

of June. In fact I think I could safely say that the moths come out every month of winter. During the month of May they come forth in general numbers. The time of the first appearance of larvæ is about the 20th of May and moths from first brood of larvæ about the 20th of June. Thus the first brood of moths come forth about the time the previous year's supply ceases. From this it is plainly to be seen that there is no cessation between, also that as the season advances the moths become more numerous, there being about five broods in southern California, as near as I can estimate.

Is it not inconsistent then to suppose that by only spraying the apples up to the time they are as large as marbles that it will keep all the larvæ out for the rest of the season.

What would we think of a farmer who would go into his field very early in the spring and cut down the weeds, thinking that would suffice to keep the field clean the balance of the year?

CONDITION OF THE FRUIT.—Now let us make observation of the apple just after the bloom drops, the time when we are instructed to spray first. We find the fruit no larger than a small pea, the lobes of the calyx stand out at right angles to the fruit, and coming out from the base of each lobe are the stamens which form a sheaf-like bunch, each stand closely to the other, which protrude from the end of the apple. Hidden by these is the calyx, no larger than a small spot. So, then, it would seem that the amount of poison spray that could be deposited in this small calyx would not be at all sufficient to destroy the larvæ that would enter there during the season, for we must take into consideration that the calyx cavity increases proportionately as the grows. Again, let us note the condition of the fruit when we are advised to spray the second time, twenty-one days from the first. We find the fruit droops considerably downward, most of the lobes of the calyx have closed tightly together and very little spray can enter it. At the time of third spraying the fruit have all turned down, the calyx lobes have all closed, so the only good we can expect to accomplish is from the spray on the surface, which will destroy the larvæ that may try to enter there.

After the calyx lobes close together, and for about ten weeks thereafter, the calyx is more tightly shut in than at any other period during the growth of the apple. After about that length of time the calyx cavity begins to expand and draw the lobes apart, giving a chance for the spray to enter. Then would it not seem advisable to continue the spraying during the greatest ravages from the codlin moth, for they are more numerous as the season advances and the conditions are more favorable for their destruction?

DISCUSSION.—Discussing this paper: In Washington there are three broods. Spray every fourteen days there. We save 85% to 90% of the apples. Here this cannot be done for the larvæ seek the calyx, some hiding place, and are harder to get at. Cases were reported of serious illness, and in two cases death followed eating apples that had been freshly sprayed with Paris green. On the other hand reference was made to Prof. Cook's report (Riley, Ag. Year Book, 1886), of experiments that resulted in no bad results.

If thorough spraying is done it will make comparatively little difference whether neighboring orchards are sprayed or not. Banding the trees and looking over them every ten days has proved efficacious. It is a great prevention. Commence as soon as the larvæ appear in the spring. They are the best supplement to the Paris green. Take hold of the ends of the band (having been put on with a half knot), and draw it back and forth once or twice; this will crush most of the worms. Then turn the bands over and replace, a few inches lower on the tree. A flock of blackbirds followed the operator and greedily attacked the worms on the outside of the bands.

Great care must be taken to clean up the storage boxes. Scalding with boiling water doesn't always destroy all the worms and larvæ.

THE DAIRY.

The Cold Process in Cheese Curing.

Some months ago we gave an outline of results achieved at the Wisconsin Experiment Station in curing cheese at low temperatures. We have now full details and conclusions, to which the following note alludes:

TO THE EDITOR:—Under separate cover, we are mailing you an advance copy of Bulletin 94 of this Station, entitled, "Curing of Cheddar Cheese, With Especial Reference to Cold-Curing," prepared by Drs. Babcock and Russell. I deem this an important bulletin on an important subject and hope you will find time to look it over. It is the natural outgrowth of their studies leading to the discovery of galactase in milk. It is worthy of note that the LaCrosse Cheese & Butter Company has adopted our recommendations and is building factories without any curing rooms and curing the product in a central establishment. W. A. HENRY, Director.

Wisconsin Ex. Station, Madison.

From the bulletin to which Prof. Henry thus gives

our readers early access we take the following very satisfactory summary:

Although cheese is unsuitable as a food product when first made, it soon undergoes a series of changes if left to itself that converts the insoluble green curd into readily digestible cheese having a high nutritive value. This change is brought about by the operation of ferment action due to the presence of chemical ferments (enzymes) and living organisms (bacteria, mostly).

RELATION OF TEMPERATURE TO CHEESE CURING.—The rate of change and the nature of the products formed by these fermentations are markedly affected by the temperature at which the green cheese is kept. Under summer conditions, the temperature is often much too high, and, as a consequence, the quality of the product is at times materially impaired.

This fact has been recognized more forcibly within recent years, and much effort has been expended to control as far as possible the temperature of cheese-curing rooms. By the aid of cold-air ducts, improved insulation and other devices, the diurnal fluctuation in temperature of cheese rooms has been greatly reduced, and it is now possible to keep the same in the neighborhood of 60° F., at which point the cheese is much improved over that cured at higher temperatures. Furthermore, it has always been considered impossible to properly ripen cheese if the temperature of the curing rooms was allowed to fall too low, the general belief being that such a condition caused the development of a bitter flavor and otherwise injured the texture of the product.

COLD-CURING OF CHEESE.—The method treated in this bulletin rests on an experimental inquiry covering a period of several years and embracing a large quantity of cheese, and handled under sufficiently diverse conditions to seem to warrant the application of the conclusions reached to commercial practice. The results of these experiments are as follows:

1. Cheese can be cured at temperatures much lower than those heretofore employed (50° F., down to and even below freezing).

2. Curing at these temperatures can be started with safety immediately after the cheese are taken from the press, without submitting them to a preliminary cure at higher temperatures.

3. Cheese made from good milk and so cured do not acquire a bitter or otherwise undesirable flavor.

4. On the contrary, the flavor produced when ripened from 33°-50° F. is relatively mild but clean, the texture in time becoming smooth, waxy and silky, the body solid and color even. In all respects the product at these lower temperatures is improved over that ripened at 60° F., the temperature that has heretofore been considered ideal for cheddar ripening.

5. The rate of curing is dependent upon the temperature employed, being more rapid at the higher temperatures used. The quality of the product is, however, quite similar in cheese cured through a range of 10°-15° from 50° F. downward.

6. In comparison with cheese made under identical conditions but cured at 60° F., the commercial value of the cold-cured product was almost without exception superior.

7. Not only is the cold-cured cheese of better quality itself, but it is of much more uniform grade, and possesses a very much better keeping quality than that cured at 60° F. and above.

8. While the cold-cured cheese is exceptionally mild in flavor, even when a year or more old, it is possible to develop almost any degree of flavor desired by exposing the cheese to higher temperatures (60° F.) for varying periods of time after they have been thoroughly broken down under cold-curing conditions. The danger of developing abnormal or undesirable flavors is much less in this subsequent treatment than it is where the green cheese is held for a period at high temperatures.

9. In cold-cured cheese it is permissible to use much larger amounts of rennet than can be safely used in cheese cured at 60° F. or above. This increase in rennet hastens the course of the ripening and has a tendency to make the cheese more open in body; but even with two or three times the normal amount of rennet, the flavor of cold-cured cheese is still clean and mild, and the texture smooth and silky.

10. Cold-cured (40° F.) cheese only lost about one-half as much moisture in eight months as cheese of the same make cured at 60° F. Although it is advisable to hold cold cured cheese for a longer time than normally cured, the losses incident to drying do not exceed those that would occur at 60° F. and are much less than would be found under conditions that now normally occur.

11. At 40° F., or below, mold does not occur as rapidly as at higher temperatures, and if precautions are taken to prevent the relative humidity of the air from becoming too high, the growth of mold is confined simply to the production of mycelium (white fuzzy growth) which can be readily removed, and does not develop the spore-bearing (dark green or black) stage. The custom of paraffining the cheese is now being followed extensively to prevent growth of mold.

12. The application of the cold-curing system to cheese ripening entails a somewhat heavier expense than is now incurred, because of the increased period of storage and the interest on the working capital.

Under proper conditions this increased cost is, however, more than compensated for by the enhanced value of the product and the lessened losses due to diminished evaporations and abnormal fermentations.

CONSOLIDATED CHEESE-CURING STATIONS.—The above system of cheese curing can not well be applied to the handling of the product of a single factory, as it entails the use of refrigeration—natural or mechanical—to secure the desired temperatures. If, however, co-operative effort is secured between a number of contiguous factories, or a system of factories under syndicate control, the cost of constructing a properly insulated and equipped cold-curing station would be no more than must be expended in building proper curing rooms in a dozen to twenty factories. Where a consolidated curing station is erected, the making factories may be of simplest construction, and do not need any provision for curing the cheese, as the product should be shipped every few days to the central curing station.

There are numerous other evident advantages that will accrue from this method of handling cheese, all of which will tend to lower the cost of the product, such as the lessened expenses of buying, of transportation, etc., while at the same time the product is of better quality, more uniform and of much better keeping quality.

Already the system of consolidated curing has been introduced into this State; but, with the development of the cold-curing system, the necessity of adopting the centralized method is made still more imperative and doubtless will lead in the near future to a material change in the cheese industry.

THE POULTRY YARD.

The Petaluma Poultry Industry.

Prof. W. A. Henry and Dr. S. M. Babcock, the distinguished experts of the Wisconsin College of Agriculture, whose visit to California we noted last July, paid a visit to the Petaluma poultry district, and Prof. Henry makes some interesting comments thereon in the Breeders' Gazette. The account will be acceptable to California readers generally and we reproduce it herewith:

California is a region of the most varied agricultural industries which are carried on in extensive form in various districts. Probably no State in the Union consumes a larger number of eggs and fowls per capita than the Golden State. Enormous quantities of poultry and eggs are produced within the State, and yet in spite of this there are heavy imports of both dressed poultry and eggs. While fowls are kept almost everywhere throughout the State in some numbers, the center of the industry may easily be located at Petaluma.

It was a most pleasant day that we chose for our journey to study the industry. In our company were Dr. A. B. Ward, veterinarian of the University of California; Mr. Charles D. Pierce, proprietor of Pierce Bros.' Holstein farm, Rough and Ready island, near Stockton; Dr. S. M. Babcock of the Wisconsin Experiment Station, and myself. It was a delightful journey across the bay of San Francisco by ferry to Tiburon, and thence about 30 miles northward to the thriving little city of Petaluma. Here we were aided in our work by Mr. H. C. Gray, manager of the Petaluma Incubator Co., who gave us much helpful information. Petaluma is located in southern Sonoma county, nestling against golden, billowy hills, dotted here and there with live oak trees, whose deep green foliage greatly enhanced the beauty of the region. A thrifty town it appears, too, judging from the character of both the business houses and the residences. One comes across poultry everywhere, even within the city limits, and on all sides there are evidences that the prolific and profitable hen rules supreme in the minds of these people.

Under Mr. Pierce's guidance we were quickly on our tour of inspection and soon noted the general characteristics of the situation. Hundreds of poultry raisers live on little "ranches," varying from an acre or two to twenty or thirty or more. The houses are often but one story in height, all the older ones embowered in trees and clambering vines, single red geraniums often reaching 8 feet in height and covering a space wider than one can reach with outstretched arms, and delicate roses climbing upward, sprawling over the roofs of the houses. Back of the residence, and often flanking it, were simple, inexpensive board structures which house the poultry when they need housing. These buildings were white-washed and kept scrupulously clean. At the first place visited we learned something of how highly the industry is specialized. Eight incubators, well warmed up to their work, were busy acting as foster mothers, taking the place of the hen, whose business was cut down to the single effort of egg production. These incubators were under the elevated domicile. The principal business of this poultryman was to hatch eggs with incubators. If the neighbors brought him eggs his charge was \$3 per hundred for all the chicks turned out; while if he furnished the eggs the

chicks fresh from the incubator would be turned over to the purchaser for \$5 per hundred.

The White Leghorn is Petaluma's favorite fowl. This fact was made plain to us early during our sojourn. Here and there everywhere on the hillsides and about the homes could be seen beautiful white birds, while few with any color to feathers were in evidence. California's sun is always hot, and in mid-summer it shines fiercely. As the day warmed up the fowls disappeared until, as we rode about, there were plenty of whitewashed poultry buildings in evidence, but very few fowls—often not a single one in sight. All had sought the shade of trees, shrubs or houses. As the sun neared the horizon the birds reappeared, vast numbers showing up on all sides, out for the evening meal and enjoying the cool of that portion of the day. The White Leghorn is chosen by the ranchers because it is vigorous, thrifty and, above all, an excellent layer. Petaluma poultrymen are primarily egg producers, and the White Leghorn seems to come nearest to filling this requirement. When one visits different stock farms he soon comes to observe how the same breeds of cattle will vary on different farms, according to the judgment and business ability of the owner. There was just the same striking difference observed with Leghorn fowls about Petaluma. In some yards the birds were not particularly large or attractive; in others fine specimens of true form, with the healthiest of combs and plumage, charmed the visitor. One would not believe that such striking differences could be possible within so limited an area as we here observed.

Some statistics may not be without interest. Secretary Cromwell of the Petaluma Board of Trade, according to the Petaluma Poultry Journal, reports that for the week ending Saturday, March 29, 1902, the local dealers of Petaluma handled 104,636 dozen of eggs, for which they paid \$15,118. Individual shippers sent to San Francisco 40,000 dozen eggs additional. Besides this, 600 dozen poultry were shipped. The total value of these products for the six days was about \$18,000, or \$3000 per day. Multiplying the dozens by 12, we note that in this one week there were produced 1,695,632 eggs.

A Petaluma poultryman with an acre and a half of ground at his disposal reports in the same journal his returns for the year as follows:

Average number laying hens during year.....	365
Number of dozen eggs sold.....	3752
Average price received per dozen (cents).....	25 3/4
Receipts from sale of eggs.....	\$963 22
Cost of feed.....	340 46
Profit from laying hens.....	622 76
Average revenue per hen.....	2 64
Average expense per hen.....	93
Net profit per hen.....	1 71
Average number eggs from each hen.....	123 1/2

This same poultryman also runs several incubators and the following is the result:

Received for chickens and broilers.....	\$422 00
Received from 100 pullets.....	75 00
Added to stock 600 pullets.....	377 00
Empty feed sacks sold.....	15 00

Total.....	\$889 00
Cost of feed and eggs.....	483 61

Profit on hatching and raising.....\$405 39

No help was employed by him during the year, the labor being performed by himself, with some assistance from his wife.

Other industries of the region are the production of butter, hay from barley and oats, fruit and vegetables. The reader will naturally ask why Petaluma has grown to such importance in this particular industry. Much of the soil where poultry is reared about this city is not particularly adapted to the production of vegetables or fruits. The market center—San Francisco—is not far away, and especially important is the fact that Petaluma is blessed with not only good rail but water communication, giving very low freight rates to the city. Other points in California could doubtless produce poultry as satisfactorily as Petaluma, but this city is the center for the manufacture of incubators, feed dealers supply all sorts of poultry foods at reasonable prices because of the large sales of such goods, and neighbors learn from one another all troubles to be avoided and advantages to be taken. As our agricultural industries progress we go more and more into specialties and this is just as it should be. If one wishes to post himself thoroughly on the poultry situation he can spend a most pleasant day visiting poultry farms in and about Petaluma.

THE Bellefleur apple crop of the Pajaro valley, according to the Pajaronian, is practically sold. Packers do not care to contract any more until trades already made are filled. If the crop was twice as heavy it could be marketed, so great is the demand from Los Angeles, and also from Eastern cold storage points. The call from southern California for Bellefleurs is unprecedentedly heavy. This variety of apple is a prime favorite for cold storage. It holds up better than most varieties.

The Great Oregon Nursery Co.

A SAFE FOUNDATION FOR PROFITABLE ORCHARDS
IN FUTURE.

Written for the PACIFIC RURAL PRESS.

Good nurseries are an essential factor in the up-building of a fruit country. One now taking the lead on the Pacific coast, apparently, from the excellence of its methods—the Oregon Nursery Co.—is situated at Salem, Oregon. In Oregon it stands admittedly at the head of the nursery business, and its sales have extended now into all the Western States, Texas and Mexico. The good opinion which the people have gained of it from experience is borne out by a study of its men and methods, its great nursery plantations, its facilities for rapid and thorough packing, and its excellent location for shipping.

The principal men in the company, and controlling its business, are M. McDonald and A. McGill, both of sturdy Scotch-Canadian parentage, who early in life chose nursery and horticultural pursuits and believed that there were greater opportunities in that line in the West than elsewhere. By extensive travel during their first few years on this coast they laid the foundation of that intimate knowledge of localities and what fruits and varieties are best adapted to each which must always be the basis of successful nursery business. This knowledge they have continued to extend and improve by further travel and investigation—of late years particularly in California, which State they now fully recognize as leading the world in fruit production.

Having by their years of traveling acquired this proper foundation knowledge, they bought an excellently located and established nursery at Salem, Oregon, organized the Oregon Nursery Co., with M. McDonald president, A. McGill secretary and treasurer, F. W. Power assistant secretary and bookkeeper, and A. W. McDonald vice-president and superintendent of nurseries, and immediately prepared for larger business. This has come steadily but surely, till now the business done by this company through its main plant and its several branches exceeds in volume many times that done by any nursery firm on the Pacific coast. The company has now several hundred acres of nursery close to Salem, and other large stocks in those parts of the State best adapted to the satisfactory growth of trees and plants; two branch offices and an extensive planting ground in California, on virgin soil, in one of the most favorable sections for growing nursery stock; a very large and well established business in Montana, located at Missoula, where thousands of acres of healthy apple orchards, paying handsome profits, testify to their reliability; and a large and increasing nursery plant and business in Washington, near North Yakima.

All these branches are under the superintendence of tried and trusted men, expert in methods and horticultural knowledge, and all are located with a special view to the wants of the States they supply with stock and the conditions for growing such stock most perfectly.

One of the editors of the PACIFIC RURAL PRESS, while in attendance at the Oregon State Fair recently, made a careful study and examination of the home plant at that place, and was pleased to find just such splendid, great fields of healthy, beautiful nursery stock, well-drained soil, thorough cultivation, strict regard for correctness in varieties, careful, painstaking superintendence, perfected shipping facilities, and other conditions, which easily explain

the wonderful success and popularity of this great nursery concern. Reason from this, the center, and remembering that all the valuable lessons learned here are carried out, from their very inception, at all these branch nurseries, it is easy to predict the bright future of this great chain of associated nurseries. Learning, each one, by the very experience of the others, they will grow stronger, better and more valuable to the orchardists of the States in which they are located.

The Oregon Nursery Co. stands ready to guarantee its every claim and make good any possible error that may creep in. But its success depends on not having any such errors; and it is inspiring to note here the infinite pains taken everywhere to prevent them, for every manager of one of these branches fully realizes that an error in naming a variety is almost a crime.

Some idea of the size of this company and its operations can be gained from the pictures on the first page, showing the office and packing force, together with a block of 300,000 apple trees.

The variety stocks of this home plant are this year largely included in one block of 100 acres—fine rolling land, rich, sandy loam, near the State Fair grounds, and conveniently situated for transportation by railroad or river. Within a radius of a few miles are their several other nursery stocks and a large block or field of ornamental trees, shrubs and plants, all in good health.

The packing facilities of the company are ample. Those at Salem are close to the company's office, on the main line of the Southern Pacific Railway, and within a couple of blocks of its depot. The offices, packing houses, sales yard and shipping tracks are in extensive and beautifully ornamented grounds, under the very shadow of the capitol building. From the dome of this building one gets a view of beautiful, green Oregon, "God's great, green State," as Joaquin Miller has it.

In the almost unlimited supply of moss for packing the Oregon Nursery Co. has a wonderful advantage, insuring the transportation of its stock in perfect condition from nursery to orchard. All of its shipments are packed in this material, which is the best thing known for the purpose, for all temperatures and conditions, and by reason of the great demand for it from nurseries in other localities, not so favorably situated, it has become a large shipper of moss, in both wholesale and retail lots. The liberal use of moss is doubtless one of the elements of this company's success in shipping to points no matter how remote and through temperatures however trying.

Neither of the pictures which we are able here to present conveys an adequate idea of the extensiveness of the company's packing plant. This large building, directly back of the men, as shown in the lower picture, is the largest and most complete on the Pacific coast, and one of the largest in the United States. It is equipped throughout with electric lights and the most approved baling appliances, and during the height of both the spring and autumn packing seasons work is continued day and night.

The packing facilities include a fumigating room for treating trees with hydrocyanic acid gas, as required by law in Oregon. Into this the trees go for precautionary treatment as soon as they reach the packing house. They are then put in stalls by varieties, taken from as wanted for orders, the roots coated by dipping into a prepared blue clay mud, filled in and wrapped with wet moss, and tops and all wrapped again in a coating of straw. Special machinery, some operated by electricity, expe-



Office and Packing Houses of Oregon Nursery Co., Salem, With Groups of Employees.

dites all this work, and bales them up neatly and securely, allowing much more rapid work and much less injury to trees or roots than can possibly be secured by hand work alone. The packing house facilities also include four cold storage rooms, which are of much use to some localities requiring late deliveries, and for the use of which no charge is made. These rooms are perfectly dark, can be kept as damp or as dry as may be desired, and in them not even white rootlets sustain the least injury.

The company will probably put out from this establishment over 1,500,000 trees this season, ample in variety for all the purposes of its extended trade, both orchard and ornamental.

In the orchard varieties it will offer one specialty which the readers of the PACIFIC RURAL PRESS have discussed through these columns. This is the Tilton apricot. Under the thorough investigation given this new variety by the Oregon Nursery Co., that which especially commended it was the fact that it did not bloom all at once, as do other varieties, but extends its blooming time over a considerable period, so that not all of its blossoms are liable to be caught by a frost. As it usually takes the perfection of only about one-tenth of the blossoms on a tree to make a good crop, the importance of this peculiarity of the Tilton will be seen by all. On account of this the original tree has not failed of a good crop in the thirteen years it has been bearing, nor have any other trees of the variety failed, so far as is known. As the fruit is equal in size to that of Moorpark, and equal in flavor to any variety, the future of the Tilton seems assured.

The old established Royal having long ago proved its excellence for many localities, they will, of course, also offer a large stock of that variety.

The Sugar prune, that wonderful addition to horticultural wealth from Luther Burbank, the "Wizard of Horticulture," has also received close investigation and study by these careful nurserymen during the two or three years of its fruiting, both in California and Oregon. It seems to fulfill all that was hoped or claimed for it in a remarkable degree, so they now offer it in full supply.

Novelties and new varieties are taken up by this company only after very careful investigation, and their patrons will go far on their recommendation.

The principal owners in the company, M. McDonald and A. McGill, are giving their time to making the acquaintance of fruit growers, to the study of localities, to the discovery and experimental propagation of new and improved varieties for various sections, and in all ways assisting orchardists to get as near as possible to the ideal of profitable production in the various States covered by their operations.

Agricultural Review.

ALAMEDA.

PROSPEROUS SEASON FOR GRAPE GROWERS.—Livermore Herald: The vintage of 1902 is proving an agreeable surprise to the grape growers. They expected a good vintage, but the most sanguine did not anticipate the magnificent crop that is being harvested. There is no lack of pickers and at the rate of \$1.50 a ton they are doing fairly well. The Pioneer Winery, which is conducted by the California Wine Association, is handling more grapes than any other winery in the county. A total of 500 tons have been crushed up to date and at least 700 tons more will be received. None but the black varieties are being handled at this winery, for which Mr. McNally has been paying from \$20 to \$25 a ton. In a few exceptional cases more is being paid, and for the white grapes in one local vineyard he paid \$35 a ton. The private wineries of the valley, of which there are quite a number, are all reporting an exceedingly favorable season.

FRESNO.

FIG CROP LATE.—Republican: Markarian, who perhaps packs more figs than any other one packer, says the figs will not be out of the way before October 15. He is working a large force of help, and still the wagons loaded with figs fight for place in line before his house. He is not receiving raisins, or has not been, because of the great quantity of figs on hand, but

he might have had thirty to forty tons of raisins in his house by this time had he been in a position to handle them. Practically the same is true of the other fig packers, and to have the crop hanging on until the middle of October is a state of affairs heretofore unexperienced.

GLENN.

FIFTY MULES BURNED.—The big barn on the Butte ranch owned by Eppenger & Co., situated 18 miles northwest of Willocks, was the scene of a disastrous fire at 1 o'clock Sunday morning. Fifty mules were burned to death. Several of the employees had narrow escapes. The loss is estimated at \$10,000.

AN ALFALFA CROP.—Reedley Exponent: C. L. Knestric of Lordsburg, N. M., is the owner of eighty acres of alfalfa 3 miles south of Reedley. He has had the crops this season cut and stacked. He has already sold 526 tons of hay in the stack at \$5 per ton, and has a hundred-ton crop now ready to cut. There were two months' feed from January to March and will be fed again this fall. Mr. Knestric has paid \$1.50 per ton for cutting and stacking the hay, leaving him \$3.50 per ton net. This is on sub-irrigated land, with water in the ditches, no other irrigation being necessary.

KINGS.

YOUNG VINES THAT ARE GREAT.—Hanford Journal: C. F. Fuller has seven acres of wine grapes on his Cross Creek farm that are a wonder for production. The vines are but one year old, yet they produced grapes that brought \$78, or a little over \$11 to the acre. They were sold to the winery of West & Son in this city this year for that price. They gave on an average 23% sugar, and one wagon-load went 26% sugar. The grapes were grown in light alkali soil.

LOS ANGELES.

ESTIMATES OF WALNUT CROP.—Fullerton Tribune: Conservative estimates of the walnut crop place the output at from 800 to 825 carloads, which is 25% larger than last year, with a greater percentage of hard shells. At a meeting of the allied walnut associations of southern California, held in Los Angeles, by a majority vote of the members the price for the present crop was established at 12 cents per pound.

FRUITS AND VEGETABLES.—Pomona Progress: Peach canning at the Pomona cannery is now finished for the season, 100 carloads having been packed. The fruit for the most part has been of exceptional quality, a large tonnage having been shipped here from Fresno county. The work of canning tomatoes began two weeks ago. This year's output will reach 60 carloads. Only 320 tons of apricots were canned and dried at the Pomona cannery this season, the greater part being dried. For the past two months the institution has employed an average of 300 workers a day. Good prices are being obtained for grapes, and already buyers are around offering 8½¢ a pound for walnuts for future delivery. There will probably be about two-thirds of a crop.

ORANGES SELL FOR \$10.50 A BOX.—Covina Argus: A dispatch from New York received Monday states that a car of Valencia oranges from Covina had been sold on the market that day, breaking the price record for California fruit. The price paid was: Extra fancy 96's, \$10.50; 126's, \$10; 150's, \$8, making an average of \$9.60 per box. The fruit was grown by E. H. Lahee, whose 10-acre grove is located within the city limits of Covina, and was formerly the property of J. H. Coolman, who sold the place to Mr. Lahee in 1898 for \$1000 an acre. This same gentleman also sold a car in the same market on Thursday of last week at \$9.60 for the extra fancy 96's.

MADERA.

IRRIGATION FOR GRAIN.—Times: The greatest field for immediate as well as future development of the agricultural resources of Madera county must be in the pumping of water for irrigation purposes. In the meantime several of our farmers are installing pumping plants, and they will soon be independent of irrigation companies and streams. Borden & Freeland were the pioneers in that line in this county, and have a plant which insures feed for their splendid dairy herd without regard to the weather, and their example is being followed by their neighbors. They have just finished irrigating 150 acres at a cost of not over \$1 an acre, and the increase of the yield will much more than pay for the extra expense. Next season there will be half a dozen plants in operation in the same neighborhood, when the experience of others can be noted and the usual cost of irrigating by this method be determined. The question has often been asked, "Will it pay to irrigate grain in the San Joaquin valley?" We are informed that where water does

not cost over \$2.50 to \$3 an acre each year that it will pay well. Several experiments have been tried here, and they all seem to warrant the statement that irrigating grain pays. In every instance the addition of water more than doubles the yield, and in some instances quadruples the yield of land adjoining not irrigated. Another experiment that has been made here is that of planting the land to alfalfa, letting it stay in that for a couple of years and then planting it to grain. In every instance it has proven a success, one field of barley yielding over thirty sacks to the acre.

ORANGE.

WALNUTS MATURING EARLY.—M. D. Halladay, a walnut grower of Santa Ana, notes that walnuts are beginning to drop in considerable quantities in a number of the orchards in that section. In general, the season is ten to fifteen days in advance of the time when the nuts began to drop last year, and conditions now point to a considerably earlier harvest than usual. In general, the crop promises to be larger than last year, although not as large as was at first expected.

AN ORDER FOR CHILES.—J. B. Joplin, the Chile King, has just received an order from the Pioneer Chile Packing Co. of Los Angeles for fifty tons of green chiles and will commence immediately to fill the order. He expects to ship from one to two tons a day until the order is filled. Mr. Joplin has supplied this firm for the past three years with green chiles and they purchase exclusively from him. He has fifty acres planted this year and the present crop will amount to about 250 tons. He has just moved a house onto his Chile ranch and will put in an evaporating outfit and will evaporate all but those needed to supply the order just received.

SAN BERNARDINO.

GOOD ONION CROP.—Chico valley Champion: Fred Armbrust has finished harvesting his onion crop and now has most of it stored in his warehouse awaiting a favorable market. He planted nine and one-half acres to onions in the early summer, on Central avenue north of town, and gave them thorough and intelligent care and cultivation. The soil is a tight sandy loam and dry. From the nine and a half acres Mr. Armbrust has harvested about twenty-five tons of onions. The varieties raised are Prizetakers, Australian Browns, Yellow Danvers, Silver King and a small pickle variety. The latter two varieties he is now selling, but the former three he has in his storage warehouse awaiting a favorable market.

STREAMS OF BEETS.—The beet harvest is not quite half finished and the total sliced at the factory foots up 44,807 tons. The sugar percentage is keeping up fairly well, the average for the past week being about 15%. Most of the beets now coming in are large, indicating a heavy yield. Work in the factory is progressing quite satisfactorily, running steadily at about 875 tons per day.

SAN DIEGO.

FINE RECORD FOR BEANS.—Union: On a piece of ground 40x60 feet, besides using all the Kentucky Wonder beans that the family needed, H. A. Buford has sold over 200 pounds, netting from 2½ to 3 cents per pound.

GRAPE HARVEST.—The grape harvest at San Diego, now under full headway, is a remarkably fine one. The yield is reported as from 30% to 200% above that of last year. The large gain of 200% is given by Mr. Hess, who has charge of the vineyard of Mr. Hutchinson, late of Wichita, Kan., who purchased the McKoon ranch a little over a year ago. Off of thirty acres he gathered 6000 trays, which, at the rate of twenty pounds to the tray, gives a yield of 120,000 pounds of grapes and 24,000 pounds of raisins—a very encouraging yield.

SANTA BARBARA.

BEAN THRESHING.—Press: The big steam thresher is at work on the Hope ranch. Reports from the bean fields show that the crop is about one-third short of last year's yield. The market has not yet been formed, buyers being a little coy, and the producers not over anxious to sell at a low figure. [Producers are decidedly level headed in not displaying any anxiety to sell at low figures. There is no trouble in securing buyers now at comparatively good prices. Sometimes as serious a mistake is made by holding on too long as selling too soon.—ED.]

SHASTA.

A NORTHERN COLONY.—Advices from Redding state that nearly 5000 acres of land in the Happy valley fruit district, in western Shasta county, is to be subdivided in small tracts and colonized. A San Francisco life association is said to be the financial backer of the scheme. This company owns the Buffum farm and or-

chard land, containing 2300 acres. This and several adjoining places will be pooled in the scheme and a large colony started. Water will be taken from the north fork of Cottonwood creek and carried over the land for irrigation purposes. A. Teague, a real estate man of Fresno, representing the company, has visited the district and made arrangements to carry out the plan.

SONOMA.

HARVESTING TOBACCO CROP.—Santa Rosa Republican: The Hermitage Tobacco Co. has completed the harvesting of the first crop. On some portions of the plantation the yield runs as high as 1000 to 1200 pounds to the acre.

TULARE.

SEEDLESS SULTANAS ON THE PAIGE RANCH.—A 30-acre vineyard of Seedless Sultanias is a sight worth going far to see. The vines had been staked up high early in the season, but the weight of fruit had broken the strings tying the canes to the posts and all had gone down to the ground under the burden. There are vines there that will have 150 pounds of grapes, and it looks as though the whole vineyard would average 100 pounds per vine, or 25 tons per acre. This would mean 150 tons of raisins, and at prices that were obtained when the last raisins were made and sold from this vineyard it would yield an income of \$12,000. However, all the grapes from this vineyard will this season go to the winery. It has cleared \$6000 on a single crop and this year, with favorable prices for raisins, might easily clear \$10,000.

NEW CITRUS INDUSTRY.—Lindsay Gazette: A new company is being formed in San Francisco, to be known as the Paradise Orange Grove Co. of Lindsay, Tulare county, Cal. The project is to plant out and conduct 800 acres of orange groves, commencing the work this year. The 800 acres of land to be used is what is known as the Goldman tract, just west of the county road, about ½ mile west of Lindsay, sixty acres of which has already been planted, and about half of this is in bearing. The company is to be organized with a capital stock of \$300,000, divided into 3000 shares at the par value of \$100 per share. The promoters, who are represented by J. L. Gooke of San Francisco, are said to be meeting with good success.

VENTURA.

A BEAN THRESHING OUTFIT THAT IS A WORLD-BEATER.—Democrat: For several months the Ventura machine shops, under management of Wm. Hamilton & Sons, has been the busiest spot in Ventura. They are just putting the finishing touches on two mammoth bean threshing outfits—one for the Mound Syndicate and another for the California Farm & Fruit Co., the corporation in possession of the Rancho Santa Clara del Norte. The latter equipment is believed to be the most complete and elaborate of its kind ever turned out in the State of California. The thresher is the finest that can be made, and, with its accompaniment of fourteen wagons and up-to-date cook house, makes a magnificent showing. It carries with it an electrical plant, which supplies a system of lights that turn night into day. The cook house is also lighted by electricity, and when the entire plant is in operation it will furnish a night scene worth going miles to see. The cost of this wonderful equipment is over \$8000.

YOLO.

IRRIGATION WITH BIG HOSE.—Dixon Tribune: Paul Peters of Yolo has adopted a novel way of irrigating his land. He has a centrifugal pump driven by a threshing engine, and the water is conveyed from the pump to his 160-acre orchard through a 14-inch canvas hose. The hose is in sections, a horse being used to move it to the different parts of the orchard. Mr. Peters states that water can be conveyed by this plan over rises in the land without trouble, and that a large area can be irrigated with very little moving of the hose line. The manager of the Kahn place has tried a number of other methods of conveying irrigation water about the place, but the hose method has his preference.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam



A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Roses.

Red roses, white roses, they sparkle and shine
With wonderful radiance, a glory divine.
With the yellow of sunset, the whiteness of snow
Ringed round with bright yellow, they sparkle and glow.

Now the pink of the sea shell deep tinges the cheek,
Then a pale, pretty white one stands fragrant and meek,
Then joining together in blotches and bands
In bright variegation, united they stand.
They sway o'er your head where the river rolls by,
They grow by the roadside, a charm to the eye.
And bright is the fire at the end of the lawn
When the bud's freshly open in midsummer's dawn.

You may sing of the shamrock, the thistle or pine,
Of the tropic's rich blossoms and sweet trailing vine,
Of the jessamine's flower, or the sweet orange tree,
But the rose, the bright queen rose, is dearest to me.

—Park's Floral Magazine.

The Infatuation of Grandpa.

Grandpa Porter had become a source of anxiety to his son and his son's wife, Mrs. John. They were fully persuaded that he was in danger of being married for his money, and that by a young minx who might well be his granddaughter. That grandpa had taken a fancy to the girl they were sure; that he thought himself deeply in love with her they feared, for he was not his usual jolly, careless old self.

He moped about in fits of melancholy abstraction; he read romances, and he had hunted up his old cracked flute that he had not touched for fifty years, and stayed out on the porch evenings playing "Robin Adair" and other by-gone ballads, with a wheezy wail that was distressing.

"I can hardly stand it," Mrs. John said, pinching up her pillow in the vain effort to shut out the sound. "He acts like a love-sick boy. I tell you, John, we've got to get him away, up to Eben's, or somewhere out of her reach."

"Yes," assented John, drowsily. "I'll write to Eben if you'll persuade him to go."

"Grandpa Porter, don't you think a change would do you good?" Mrs. John asked the next morning. "Eben'll come for you any time you want to go up there for a visit."

"I won't go to Eben's! I won't stir one step! I don't like Mrs. Eben; we always quarrel. If you want me to turn out I'll go over to Widow Smith's and board."

And Widow Smith was the mother of the minx.

"Why, grandpa, nobody wants to turn you out," Mrs. John cried, hastening to appease him. "It was just that you seem out of sorts lately, and we thought a change would perk you up."

"I'm not out of sorts! I'm spry as anybody!" he declared. "I suppose you think I'm getting old, and sort o' helpless, and haven't much life left. Look here!" and he turned down a chair and skipped over it. "And look here!" he pranced across the porch, jumped the steps, ran to the woodpile and brought in a big armful, saying as he threw it into the box, "I guess John couldn't beat that very much, could he, hey? I don't go down to the gym for nothing."

"Why, Grandpa Porter!" Mrs. John exclaimed, amazed at the exhibition.

A laughing face looked in at the side door and a blythe young voice said gayly: "Good for you Mr. Porter! I told you the other day that you were younger than half the boys. You ought to see him on the turning bar, Mrs. John." She set a basket on the table, adding, "Here are some eggs Grandma Taylor was bringing to you."

I thought them too heavy for her and came along to carry them for her. She looked tired. Take this rocker, grandma," in anxious solicitude.

The brisk, anything-but-tired-looking old lady, who had followed her in, sat down stiffly and the girl rattled on, "No, Mrs. John, I can't stop a minute. Mr. Porter, it's about time for you to go to the gym, isn't it?"

Grandpa got his hat with alacrity, and they went away, stopping first for the minx to fasten a rose in his button-hole.

"Mr. Porter!" Mrs. John burst out, sarcastically, as soon as they were gone. It used to be grandpa before he took this silly notion. "She came on purpose to get him, she's done it before—the bold piece!"

"I didn't want any of her help; she took the basket right out of my hands. As if I couldn't carry it across the street. One would think me too old and feeble to stand up alone, to hear her take on. Grandpa Porter!" she said, indignantly, "I'm two years younger than he is," a red spot on each cheek and sparks in her eyes.

"I suppose you saw him making a speck of himself"—grandma nodded—it's disgusting the way an old man will act when he takes a notion to a young girl. I wish his old flute was in the stove. I'd put it there if I dared, I get so tired of his sentimental tooting. I know it disturbs your folks, too."

Grandma didn't say so, but to tell the truth, she kept her window open to hear it; the old-fashioned tunes appealed to her heart, awakening memories of youth and love.

"If Grandpa Porter has got to be so foolish, I don't see why he couldn't have taken a notion to grandma," Mrs. John mused, regretfully, as grandma walked briskly away, erect and trim. "That girl will keep him off till noon, I expect."

Which she did, and then hung on the gate at her own home and talked to him till Mrs. John had to send one of the children to tell him to come to dinner.

The child ran back with big eyes, exclaiming: "You'd just ought to see grandpa!"

"They all looked 'with big eyes' when he came in. He was shaved clean of all his beautiful white beard, leaving only a mustache, and that was waxed until it shone; his hair was cut in the latest fashion and, with his ruddy cheeks and twinkling eyes, he looked absurdly young, almost younger than his son.

"Well," he said, as they stared at him, "isn't it an improvement?"

Words failed them.

"I'm prepared for anything now," Mrs. John confided to her husband, later. "It's plain that she put him up to it. Maybe if she knew about his will she wouldn't be so bent on marrying him."

"She does know; I had a good chance and told her the other day."

"What did she say?"

"Just laughed and said folks changed their wills sometimes. She's got a long head, I can tell you; she knows that she can coax his money out of him, and she don't care what anybody thinks."

"Perhaps if you talked right out plain to him, showed him what a laughing stock it's making of him—"

"It wouldn't do, Lucy," her husband interrupted. "He'd get mad and leave in a minute. You know how touchy pa is."

Mrs. John groaned. She remembered the threat to go and board at the minx's home; like enough he'd be glad of an excuse to do so.

Sunday grandpa came out dressed for church in the extreme of style, twirling a dainty cane as airily as any callow "dude," and boldly marched away to where the minx was waiting for him with a fresh rose for his button-hole.

"You see," said Mrs. John to Grandma Taylor, as the two families walked on together.

"There's no fool like an old fool," quoted Mrs. Ray, grandma's daughter.

"Old Mr. Porter is no fool, though he does act like one," grandma remarked.

"No, more's the pity," said John, half regretfully. "I'd interfere and stop it if there was a ghost of a chance that way. But he's too sharp at his business affairs to have anything the matter with his mind."

"Oh, he knew too well what he was about," grandma reflected, "and he walked as supple as a boy." She looked at the girl beside him, in white, fluffy array, and then glanced at her own plain sombre habiliments and decided that she would no longer dress for a funeral, although it was considered proper for elderly ladies to robe themselves thus.

"Mamma," Bessie complained, a few days later, "the children at school laugh at me and say that Polly Smith is going to be my grandma."

"Well, wouldn't she be a sweet little grandma," grandpa asked, with a cackle.

Mrs. John bit her lips to keep the hot words back.

"I do believe it's catching," Mrs. Ray ran across to confide to Mrs. John. "Ma's been and got a lavender colored lawn, and white ties, and a jaunty bonnet with lavender ribbon and violets; she says she has smothered in black all she's going to."

"That's not so bad," Mrs. John replied. "As long as she don't go gallivanting around with some young fellow."

"Oh, ma'd never think of marrying anybody. I just wouldn't allow that—young or old," Mrs. Ray declared, somewhat incoherently.

"Well, you can manage an old lady, but an old man you can't. I feel as if we were disgraced," Mrs. John rejoined.

She was sure of it when one day grandpa dressed up, brought a livery rig and took the minx out for a ride to his farm. She clapped on her sunbonnet and went to interview the minx's mother.

"Don't you think it's disgraceful for a young girl to go traipsing off with an old man, Hannah Smith," she demanded, with asperity.

"Mr. Porter is a man of good character and a church member," Mrs. Smith asserted, bridling defensively.

"Oh, I understand; you are in the game, too," Mrs. John retorted.

Mrs. Smith closed her mouth firmly and tossed her head. And Mrs. John gave it up and went home; she knew Hannah Smith well enough to know that you needn't say anything more to her, when she looked like that.

Grandma Taylor was just leaving her neighbor's when the couple returned. She bowed to them in cold hauteur as she passed, and the saucy minx laughed gayly.

Grandpa's other two sons, Eben and Charles, in answer to urgent appeals, made their appearance.

Grandpa flew into a rage. "I won't have anybody meddling with my affairs," he declared, stamping around noisily. "I'll do as I please, and it's none of your business."

Eben remonstrated, and Charles coaxed in vain; then they went off to tackle the minx. Eben gave and took immediate offenses, and left to go over it again uselessly with his father.

Charles sauntered in when the storm had spent itself. "You're a gay old boy, pa," he said, slapping grandpa on the back, "and you must bring Mother Porter up to see us."

"Now, that something like it," grandpa replied, shaking his hand, warmly.

Her last hope gone, Mrs. John subsided in tears, and a headache; and grandpa shut himself up and played all the old melodies he could remember, triumphantly, but with a more distractingly wheezy wail than ever.

Across the street an old lady lingered by the open window, listening hungrily, at times wiping away a furtive tear.

"Grandpa and minx were thicker than 'peas in a pod,'" Mrs. John said, after his declaration of independence and victory over his sons. And then one day, after an early dinner, he dressed in his best and again took her for a long ride out in the country. It happened to be a day when Grandma Taylor, in lavender lawn, white tie and new bonnet, had gone to

visit an old friend, and Mrs. Ray was at liberty to run over and condole with Mrs. John.

"I don't know what I would do if it were ma, but I'd never consent to her marrying again."

"Pa Porter don't ask anybody's consent, unless it's that girl's. I guess you couldn't help yourself in my place."

"Maybe not. But ma knows my mind too well ever to think of such a thing. 'Why,' she added, laughingly, 'when she first came here I was a little anxious about her and grandpa, they took to each other so. But she hasn't had much to say about him, since I spoke to her about it.'

"That would have been a suitable match," Mrs. John replied, "and we couldn't have objected. But I suppose Grandma Taylor is too old and withered looking to suit Pa Porter."

"She's younger than he is, and looks it, too, in her new things," said Mrs. Ray, taking up the cudgels. Then she added, smiling: "We're talking nonsense; for no matter what anybody thought of ma, I'd never allow a man in my father's place."

"Well, you can manage an old lady, but you can't a headstrong old man," Mrs. John reiterated, with a sigh.

Toward night Mrs. Ray hurried in again. "Polly Smith has come home a-foot and alone; what do you suppose she's done with grandpa?"

"Come with me and we'll find out," said Mrs. John.

"The minx was at the gate, apparently on the lookout for some one. 'How did you hear?' she asked, her face one radiant smile."

"We've heard nothing," Mrs. John answered, shortly; "I want to know what's become of Grandpa Porter."

"Why, they're riding around somewhere, I guess; I came away right after the wedding—"

"What wedding—where?" shrieked Mrs. John.

"Up to the parsonage, of course, and—"

"And you came off alone as soon as you were married?" interrupted Mrs. Ray; Mrs. John was speechless.

"But I'm not married," said the minx, serenely.

"Then, who—" began Mrs. Ray, a wild suspicion seizing her.

"There they come!" the smiling minx broke in. "Don't they look sweet!" as a buggy whizzed around the corner.

"Ma Taylor!" gasped Mrs. Ray.

"Grandma Taylor-Porter," corrected the minx. "And we've had such a time with her, grandpa and I. She was so afraid of offending her folks that she wouldn't listen to grandpa at all, until she got wretchedly jealous of me. Poor grandpa was so miserable over it—and grandma, herself, wasn't happy."

"No," added grandma, seriously. "And I decided that you should not break both our hearts with your notions, Emma."

Mrs. John went off into peals of laughter, aided by the minx and bridegroom. Mrs. Ray turned her back on the hilarious crowd and fled.

Eventually, she relented and took the happy old couple into favor, but she never forgave Mrs. John that laugh.—Lena J. Strong.

Headaches.

Dr. S. Weir Mitchell formulates the following conclusions: There are many headaches which are due directly to disorders of the refractive or accommodative apparatus of the eyes. In some instances the brain symptom is often the most prominent and sometimes the sole prominent symptom of the eye troubles, so that, while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital or frontal headache. The long continuance of eye troubles may be the unsuspected source of insomnia, vertigo, nausea and general failure of health. In many cases the eye trouble becomes suddenly mischievous, owing to some failure of the general health, or to increased sensitiveness of the brain from moral or mental causes.

Three Ages of Woman.

At fifteen, like an opening bud,
The maiden fair is seen;
And she would have the world believe
That she is full eighteen.

Next, by the time that thirty years
Their steady course have run,
She then would have us understand
She is but twenty-one.

Time rolls around, her girlhood friends
Are nothing more but names,
Though she has seen but ninety years,
A century she claims.

—New York Times.

Honest Little Dick.

In all my life I never saw so honest a little cat as our Dick. He not only never stole himself, but he would not allow any other cat to steal if he could help it. The dear little fellow, however, was strongly tempted once, and came very near to losing his good name.

One day the cook carried out a pail of nice little frostfish, and set it down in the yard. Dick was there. Dick always was near by when there were good things to eat. The cook went back into the house and Dick sat down to wait for her return; and two of his especial friends were at the window upstairs, looking down to see what "honest little Dick" would do!

The cook was a long time coming back to dress the fish, and all the while Dick kept watch—now on the pail, now on the kitchen door. At last he went somewhat nearer to the pail, then nearer, yet again nearer. Ah! frostfish smell so good. Dick's little nose almost touched them! Then he sat down and cried at the top of his voice for cook to return quickly and save him from becoming a thief.

Still she did not come. At last Dick put his forepaws on the edge of the pail. Then he looked at the kitchen door and cried again. But the door did not open. So slowly, softly, a paw reached down into the pail. But, before it had gone as far down as the fish, it came back with a jerk empty, and its owner ran around the corner of the house where he would not see or smell those nice frostfish any more. He did not want to be a thief, and we believe that the little fellow never came so near it again.

Food for Nervous Individuals.

As a rule, salt meat is not adapted to the requirements of nervous people, as nutritious juices go into the brine to a great extent. Fish of all kinds is good for them. Raw eggs, contrary to the common opinion, are not as digestible as those that have been well cooked. Good bread, sweet butter and lean meat are the best food for the nerves. People troubled with insomnia and nervous starting from sleep, and sensations of falling, can often be cured by limiting themselves to a diet of milk alone for a time. An adult should take a pint at a meal, and take four meals daily. People with weakened nerves require frequently a larger quantity of water than those whose nerves and brains are strong. It aids the digestion of these by making it soluble and and seems to have a direct tonic effect. —Science News.

"One thing I like about her is that she never gossips," said one woman.

"Nonsense!" said Miss Cayenne. "That doesn't indicate amiability. It merely shows that she has no friends who will intrust her with a secret." —Washington Star.

STATE OF OHIO, CITY OF TOLEDO, } ss.
LUCAS COUNTY,

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY,
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1896.

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DOMESTIC ECONOMY.

My Daughter's Learned to Cook.

We used to have old-fashioned things, like hominy and greens,
We used to have just common soup, made out of pork and beans,
But now it's bullion, consomme and things made from a book,
And Pot au Feu and Jullienne, since my daughter's learned to cook.

We used to have a piece of beef—just ordinary meat,
And pickled pig's feet, spareribs, too, and other things to eat.

While now it's fillet and ragout, and leg of mutton braised,
And macaroni au gratin, and sheep's head Hollandaised,
Escallops a la Versailles—a la this and a la that.

And sweetbread a la Diopposse—it's enough to kill a cat!
But while I suffer deeply, I invariably look

As if I were delighted 'cause my daughter's learned to cook.

We have a lot of salad things, with dressings mayonnaise;
In place of oysters, Blue Points fricasseed a dozen ways,

And orange roley polley, float and peach meringue alas,
Enough to wreck a stomach that is made of plated brass!

The good old things have passed away in silent sad retreat;
We've lots of highfalutin' things, but nothing much to eat.

And while I never say a word, and always pleasant look,

You can guess I've had dyspepsia since my daughter's learned to cook.

—Ex.

Domestic Hints.

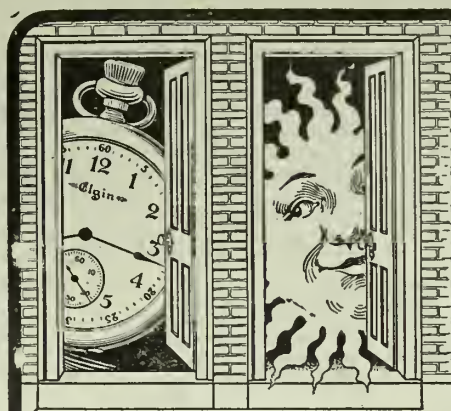
BEEF'S HEART STUFFED.—Remove all the muscles from a well-washed beef heart. Parboil and stuff with a dressing of moistened breadcrumbs, a small onion, salt, pepper, sage and thyme. Tie it well, and rub salt on the outside. Place in pan with a few slices of bacon or plenty of butter and one-half cup hot water. Cook in very hot oven till done, basting frequently.

GLUTEN ROLLS.—Three cups of kernel flour, two even tablespoonfuls of baking powder, half a teaspoonful of salt, two cups of milk. Mix the flour, salt and baking powder together, then stir in the milk, beat well. If baked in iron roll pans heat them well, brush with butter; if granite ware, only grease them. This quantity will make sixteen rolls. Bake from twenty to twenty-five minutes.

EGGS WITH BREAD SAUCE.—Put one heaping cupful of breadcrumbs (the center of the bread) into a saucepan, with a cupful and a half of milk, one-half a teaspoonful of salt, a dash of cayenne and one-half a teaspoonful of onion juice, and simmer slowly until thick and smooth, beating several times with a spoon. Pour the sauce into a broad, shallow dish, and break carefully over it six eggs. Place in a hot oven until the eggs are set then send quickly to the table.

APPLE DOWDY.—One-half loaf stale brown bread, eight large, tart apples, one-half teaspoonful cinnamon, one-fourth cupful dark-brown sugar, one-half cupful cold water, two tablespoonfuls butter. Cut the bread in thin slices, and pare off the crusts. Butter each slice. Lay them into a buttered baking dish till it is neatly lined. Inside put the apples, pared and sliced, the sugar, cinnamon, a dust of salt, and pour over all the water. Cover the top with bread, buttered side up. Bake slowly for an hour. Serve hot with a liquid or a hard sauce.

SARATOGA CHIPS.—Peel some medium-sized white potatoes, and slice them very thin. It is better to have a potato slicer for these, if possible, as it cuts them so quickly and perfectly. Wash the potatoes in one or two waters, then cover with fresh water and lay a lump of ice on the top of them. Let them stand an hour, if convenient, drain in a colander, wipe dry with a towel and fry in boiling fat—not too many at a time in the basket or they will stick together and will not brown. Have a quick fire and fry until brown and crisp,



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drain on paper, sprinkle with salt and serve.

Hints to Housekeepers.

When a dish that has a liberal garnishing of parsley is removed from the table, put each green sprig in ice water to revive if wilted, and lay away wrapped in wet muslin, to be used again as a garnish or cooking.

For cucumbers fried in batter, pare three or four of good size, cut them in thin slices, sprinkle with pepper and salt, and let them stand twenty minutes. Meanwhile, make a batter with one well-beaten egg, one pint of flour, one teaspoonful of butter, one teaspoonful of baking powder, a saltspoonful of salt and milk to make a batter. Beat until it is smooth. Drain the cucumber slices, dip them into the batter and fry in deep fat. Drain on brown paper and serve hot.

Nasturtium vinegar is in high esteem for salad dressings and for certain sauces in which vinegar is used. Fully blown flowers are best for the use. Put them into the large glass bottles, and shake them well together. Put in each bottle a finely minced shallot and one-third of a clove of garlic, and fill with white or cider vinegar. Let this stand two months. Then strain through cheesecloth, stir in one-half ounce of cayenne pepper and one-half tablespoonful of salt; bottle and cork securely.

Sometimes there are small left-overs of cooked oysters or clams. If the oysters are in a milk stew strain off the liquor and save it. It may be enriched by a spoonful of butter or a half a cup of cream. Season well, and heat in the double boiler, and add the oysters, but only just long enough to heat them. More than a minute will overcook them. Oysters or clams which have been broiled or lightly cooked in any way may be deviled, curried, or used in rissoles or chops. Chop coarsely a cupful of cold scalloped oysters with a well-beaten egg, and shape into croquettes; flour, egg, crumb and fry. Lobster meat can be utilized in almost any recipe that calls for that excellent shellfish or converted into delicate soup.

The immediate treatment for bites of rabid animals is as follows: The tissues around seat of injury are to be compressed by a ligature or otherwise, to prevent absorption. Then the wounded part is to be excised as soon as possible, taking care to remove every portion touched by the animal's teeth, and obtain a clean raw surface. The wound should next be washed by a stream of water long poured over it; lunar caustic or nitrate of silver to be afterwards applied. For bites of venomous reptiles, the wound to be thoroughly and immediately sucked freely and perseveringly. It is well known that these poisons may be swallowed or smeared upon the lips and tongue (provided there is no abrasion) with impunity. At same time a ligature to be placed around the limb above the wound, or if this be impossible from its situation, the textures around are to be compressed. Then the bitten part to be excised, or it may be destroyed by actual cautery, with nitric acid, strong liquor ammonia or nitrate of silver.

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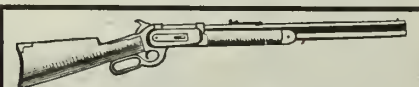
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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Oct. 8, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	68% @ 69%	70 @ 70%
Thursday.....	70% @ 69%	71 @ 70%
Friday.....	69% @ 70%	70% @ 71
Saturday.....	70% @ 69%	71% @ 70%
Monday.....	70% @ 69%	71% @ 70%
Tuesday.....	69% @ 69%	71 @ 70%

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	31% @ 31%	31% @ 32%
Thursday.....	31% @ 31%	32% @ 32%
Friday.....	31% @ 32%	32% @ 34
Saturday.....	33% @ 32%	34% @ 33%
Monday.....	32% @ 32%	34 @ 33%
Tuesday.....	32% @ 32%	33% @ 33%

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 22% @ 21%	\$1 24 @ 23%
Friday.....	1 22% @ 21%	1 24 @ 23%
Saturday.....	1 21% @ 21%	1 23% @ 23%
Monday.....	1 21% @ 21%	1 23% @ 23%
Tuesday.....	1 21% @ 20%	1 23% @ 22%
Wednesday.....	1 20% @ 20%	1 23% @ 23%

WHEAT.

Firmness has been more pronounced in the local wheat market than during previous week. Quotable values for milling grades were without special improvement, but exporters found it necessary to advance bids 25@50c per ton on the figures which they had been paying, round lots of good shipping wheat being quotable up to \$1.21, Port Costa delivery. With the advance noted, buyers were not troubled with an excess of offerings. While it is not probable that wheat values will touch very high levels the current season, the market presents a generally healthy tone at present, and nothing in sight at the moment to warrant anticipating the development of any pronounced weakness for some time to come. Chicago has been showing more strength than Liverpool. This is nothing unusual, however, as English operators are almost invariably bears on the market, it being to their interest to follow in that groove. Europe, and more particularly the United Kingdom, is the dumping ground of most of the surplus wheat of the entire earth. Often there is no other market to ship to. Lately, however, South America, Australia and South Africa have been compelled to import wheat. This has been particularly fortunate for this State and Coast, as the above sections naturally look this way for all food supplies which they are compelled to import and which we are able to furnish. Speculative values for several days past have ruled easier, and spot wheat inclined against sellers, but was not quotably lower.

California Milling.....	1 21% @ 25
Cal. No. 1 shipping, alongside.....	1 18% @ 20
Oregon Valley.....	—
Washington Blue Stem.....	—
Washington Club.....	—
Off qualities wheat.....	1 15 @ 17%

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	58% @ 55 1/2	65 1/2 @ 65 1/2
Freight rates.....	38% @ 37 1/2	20 @ 21 1/2
Local market.....	95 @ 97 1/2	1 18% @ 21 1/2

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.22% @ 1.20%.
May, 1903, delivery, \$1.24 @ 1.22%.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.20% @ 1.20%; May, 1903, \$1.22% @ 1.23.

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on October 1st and September 1st:

Tons—	Oct. 1st.	Sept. 1st.
Wheat.....	*86,988	67,337
Barley.....	*64,009	69,066
Oats.....	8,695	6,985
Corn.....	1,282	1,463

*Including 41,438 tons at Port Costa, 43,512 tons at Stockton.

†Including 45,952 tons at Port Costa, 9,318 tons at Stockton.

Stocks of wheat in near-by warehouses on 1st inst. show an increase of 19,651 tons for the month of September. A year ago there were 134,373 tons wheat in near-by warehouses.

FLOUR.

As regards quotable values or general tone, the market is without noteworthy change. Flour continues to be sold in this center, more particularly the product of outside mills, at lower figures than are warranted by present prices of wheat. Trade on local account is not especially brisk, but there is a fairly liberal movement outward, most of the flour going afloat for foreign destination representing deliveries on contracts of special brands.

Superfine, lower grades.....	\$2 40 @ 2 65
Superfine, good to choice.....	2 75 @ 3 00
Country grades, extras.....	3 40 @ 3 60
Choice and extra choice.....	3 60 @ 3 90
Fancy brands, jobbing.....	3 90 @ 4 00
Oregon, Bakers' extra.....	3 00 @ 3 30
Washington, Bakers' extra.....	3 00 @ 3 50

BARLEY.

Speculative values for this cereal were not so well sustained as during preceding week, but prices in the open market could not be said to be much less favorable to buyers than the figures previously ruling. Heavy clearances of barley have been made the current week for Europe, and shipments in the near future are likely to continue on a liberal plane, if exporters can secure sufficient grain. Over 100,000 tons of barley has been already shipped, making this a banner year in the matter of exporting this cereal from California. Offerings at present are of very moderate volume, both of brewing and feed descriptions.

Feed, No. 1 to choice.....	1 10 @ 1 12%
Feed, fair to good.....	1 07% @ 1 10
Brewing, No. 1 to choice new.....	1 12% @ 1 15
Chevalier, No. 1 to choice.....	1 35 @ 1 50
Chevalier, common to fair.....	1 15 @ 1 30

OATS.

The tendency of prices has been to a little higher plane than lately current, especially on choice to select qualities. Low grade oats are not being much sought after, and to find prompt custom for same, rather low figures have to be accepted. Inquiry is most pronounced for desirable seed oats, and offerings of this sort are selling to best advantage.

White Oats, fancy feed.....	1 22% @ 27%
White, good to choice.....	1 15 @ 20
White, poor to fair.....	1 10 @ 12%
Gray, common to choice.....	1 12% @ 22%
Milling.....	1 20 @ 25
Surprise, good to choice.....	1 25 @ 30
Black Russian.....	1 00 @ 25
Red.....	1 02% @ 25

CORN.

There are moderate offerings of Large and Small Yellow, but not enough to admit of much wholesale trading. Prices continue fully as unfavorable to buyers as previously quoted. White corn is not quotable, market at present being virtually bare of this variety.

Large White, good to choice.....	— @ —
Large Yellow.....	1 45 @ 1 47%
Small Yellow.....	1 47% @ —

RYE.

Market is fairly steady at the quoted advance, with little offering, either on the spot or to arrive.

Good to choice.....	1 05 @ 1 10
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BUCKWHEAT.

There are no evidences of any business doing. Values are poorly defined, owing to the prevailing dullness.

Good to choice.....	1 55 @ 1 70
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BEANS.

The strong tone noted as existing in the bean market at date of last review has been since then still more pronounced. Inquiry has been active, both for shipment and on local account. Many look for still higher prices. That it will be a good year for those fortunate enough to have a fine bean crop is a foregone conclusion. Business is mostly in Large Whites or Lady Washingtons, these constituting the bulk of present offerings. Prices of white beans have advanced about \$1 per cental in the last three weeks. Another feature favoring the grower in this State this season is that the weather up to date could not have been improved upon for harvesting the crop.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	3 00 @ 2 25
Lady Washington.....	3 00 @ 3 25
Pinks.....	2 50 @ 2 75
Bayos, good to choice.....	3 00 @ 3 15
Reds.....	2 50 @ 2 75
Red Kidney.....	3 75 @ 4 00
Limas, good to choice.....	4 00 @ 4 10
Black-eye Beans.....	3 85 @ 4 00
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

There are no heavy stocks of Niles Peas, and market for this variety is tolerably firm at prevailing rates, although demand cannot be termed brisk at full figures. Blue or Green Peas are in more than ample stock for immediate trade needs, and values for same are barely steady.

Green Peas, California.....	1 50 @ —
Niles Peas.....	1 75 @ —

WOOL.

The local market continues decidedly quiet, for the very substantial reason that there is scarcely any desirable wool offering here at present from first hands. Most of the recent purchasing has been done in the interior, and the bulk of the clip is now in second hands, one large Boston firm having secured the major portion of the most desirable wools. Defective wools are moving slowly, but in the main at fully as good figures relatively as have been lately current on good to choice stock. Quotable values are without change, but market is decidedly firm at current figures.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

Nothing of consequence doing in the local market, neither growers nor dealers having shown disposition thus far to crowd matters in the way of getting down to business. Quotable values for 1902 hops remain nominally at 20@24c for fair to choice. To purchase freely higher figures might have to be paid, and on selling pressure lower prices might have to be accepted. The following is from a New York review: "It is still a rather perplexing situation, and until stock begins to arrive more freely there will be much uncertainty as to the course of the market. At present brewers are showing less interest in the domestic stock than might be supposed, in view of the apparently strong conditions elsewhere; but some of them have contracts already in hand for considerable of the new crop, and they are securing a fair quantity of German hops rather than pay the full rates asked for State. Dealers are hesitating to buy at all largely until the situation is a little clearer. Some of the first arrivals of German hops are now being delivered; the prices asked from brewers' trade are from 35c for good quality up to 38c for choice. Late cables from Germany report active buying and market firm. Unfavorable weather is again reported in England, and estimates of the crop are being reduced; 320,000 to 325,000 cwt. are given as the maximum, and the yield may not be over 300,000 cwt. Quotations in London run from 100s to 160s, as to quality, etc. Advances from this State indicate much indifference on the part of growers as to whether they sell now or hold for a later market; the crop is so small that farmers ask 30c or more."

HAY AND STRAW.

Values for hay are being maintained at much the same range previously quoted, but market is not remarkable for strength. Dealers have stocks tolerably well under control, especially of stable hay, and to this fact is largely due the existing stability. Demand is not brisk at full current figures. If an active inquiry should set in, prices would speedily harden. Straw market is firm, under light offerings.

Wheat, good to choice.....	10 50 @ 13 50
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 11 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 50
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 50
Straw, 1/2 bale.....	40 @ 55

MILLSTUFFS.

Supplies of Bran and Middlings continue of light volume, prices remaining at much the same high range as for some time past. In the market for Rolled Barley and Millied Corn there have been no appreciable changes in conditions or values since date of last review.

Bran, 1/2 ton.....	20 00 @ 21 00
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 00 @ 22 50
Barley, Rolled.....	23 00 @ 24 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

Market for the several kinds quoted herewith is in the main quiet. There are no heavy spot stocks of any variety, and there is in consequence little opportunity for wholesale trading. Quotable values remain practically as last noted.

	Per ctt.
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 20 @ 3 50
	Per lb.
Canary.....	4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/4 @ 4

BAGS AND BAGGING.

Little doing in this department, which is natural for this time of year. The market for Grain Bags presents a weak tone, with little other than asking rates at the moment upon which to base quotations.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	5 @ 5 1/2
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 5 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	3 @ 35
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/2

HIDES, PELTS AND TALLOW.

There are no special changes to record in quotations, but the market for Hides and Pelts shows weakness. The strike of the tanners is still on here, and advices from the East report lack of firmness there. Tallow is in fair request at prevailing rates, mainly for shipment.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 1/2 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 1/2 @ —
Light Steers, under 48 lbs.....	8 1/2 @ —	7 1/2 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/2 @ —	7 1/2 @ —
Stags.....	7 @ —	6 @ —
Wet Salted Kip.....	8 1/2 @ —	7 1/2 @ —
Wet Salted Veal.....	9 1/2 @ —	8 1/2 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 17	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 00 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 00 @ —
Salted Horse Hides, small.....	1 50 @ —	2 00 @ —
Dry Horse Hides, large.....	1 75 @ —	— @ —
Dry Horse Hides, medium.....	1 50 @ —	— @ —
Dry Horse Hides, small.....	1 25 @ —	— @ —
Dry Colts' Hides.....	50 @ —	— @ —
Pelts, long wool, 1/2 skin.....	80 @ —	100 @ —
Pelts, medium, 1/2 skin.....	50 @ —	75 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	40 @ —
Pelts, shearing, 1/2 skin.....	15 @ —	30 @ —
Deer Skins, best summer.....	35 @ —	— @ —
Deer Skins, good medium.....	— @ —	30 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/2 @ —	6 @ —
Tallow, No. 2.....	4 1/2 @ —	5 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

Considering the limited quantities offering, and the firm views of holders, there is a fair amount of business doing. The firmness of the market, however, is confined principally to high-grade stock. Offerings of Water White Honey are of especially light proportions.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	5 1/2 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/2
White Comb, 1 lb frames.....	12 @ 12 1/2
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/2

BEESWAX.

Receipts and offerings continue of slim volume. Market is firm at current rates, and is not like to rule lower this season.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

There are no quotable changes to record in prices for Beef, but market is firm at current figures. Small Veal is arriving quite freely and is meeting with a rather weak market. Large Veal in prime condition is commanding, however, fully as good figures as for some time past. Mutton and Lamb in prime to choice condition are in very fair request at values quotably the same as last noted. Hogs are not arriving in heavy quantity, and for desirable stock for packers there is a fairly good demand at values quoted.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/2 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	6 @ 8 1/2
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, hard, over 250 lbs.....	6 1/2 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/2 @ 8
Veal, small, 1/2 lb.....	7 1/2 @ 9
Veal, large, 1/2 lb.....	7 @ 8 1/2
Lamb, spring, 1/2 lb.....	9 @ 9 1/2

POULTRY.

The market showed much the same easy condition as during preceding week. There were tolerably heavy arrivals of Eastern poultry, and same was offered at figures close to those current for domestic product. As the Eastern poultry averages larger than the California stock, it is

given the preference by many retailers and consumers. Small Broilers in fine condition inclined in favor of sellers, arrivals of same being light.

Turkeys, alive, choice young.....	17	@	19
Turkeys, alive, Hens, # lb.....	15	@	16
Turkeys, alive, Gobblers, # lb.....	15	@	16
Hens, California, # dozen.....	4	@	50
Roosters, old.....	4	@	50
Roosters, young (full-grown).....	4	@	50
Fryers.....	3	@	75
Broilers, large.....	3	@	75
Broilers, small to medium.....	3	@	50
Ducks, old, # dozen.....	2	@	50
Ducks, young, # dozen.....	2	@	50
Geese, # pair.....	1	@	25
Goslings, # pair.....	1	@	25
Pigeons, old, # dozen.....	1	@	25
Pigeons, young.....	1	@	25

BUTTER.

Market is well stocked with fresh for this time of the year. High-grade creamery is offering at concessions on figures lately current. Second-grade fresh is dragging badly. Consumers who ordinarily take medium qualities of fresh are now running almost wholly on cold-storage cubes. Cheap pastry butter is not in heavy supply. Present stocks of latter are mostly Eastern ladies.

Creamery, extras, # D.....	29	@	30
Creamery, firsts.....	26	@	28
Dairy, select.....	26	@	27 1/2
Dairy, firsts.....	24	@	25
Dairy seconds.....	21	@	23
Firkin, good to choice.....	21	@	23
Mixed store.....	18	@	20
Pickled Roll.....	22	@	24

CHEESE.

There are no heavy stocks of any description at present. Mild flavored new of high grade is most sought after, and is being favored with a firm market, with sales in a small way above quotable rates. Eastern markets have again advanced, New York cheddars and twins being now quoted 12@12 1/2c there.

California, fancy flat, new.....	12	@	12 1/2
California, good to choice.....	11	@	12
California, "Young Americas".....	11 1/2	@	13

EGGS.

The bulk of the business is in cold storage eggs. Fancy fresh are scarce, and are quoted at very stiff prices, especially by those who have none but who are interested in cold storage goods. Some of the retailers are foisting refrigerator eggs on consumers for fresh at a big profit. To command extreme current figures for fresh on offerings from producers, the eggs must be uniformly large, white and in every way suited to the requirements of the most exacting custom.

California, select, large, white and fresh.....	46	@	47 1/2
California, select, irregular color & size.....	37 1/2	@	42 1/2
California, good to choice store.....	27 1/2	@	32 1/2

VEGETABLES.

Most varieties of vegetables showed reduced receipt, and other than Winter varieties are likely to make a rather light display for some weeks to come. Egg Plant was materially higher. Other changes in quotations were not very marked or numerous, but such as were effected were in the main to stiffer figures. Onions were slow of sale, and market remained fully as favorable to buyers as last quoted.

Beans, Lima, # lb.....	3	@	3 1/2
Beans, String, # lb.....	2	@	3 1/2
Cabbage, choice garden, # 100 lbs.....	65	@	75
Cucumbers, # large box.....	50	@	75
Egg Plant, # large box.....	75	@	100
Garlic, # lb.....	2	@	2 1/2
Onions, Yellow Danver, # cental.....	40	@	55
Okra, Green, # box.....	40	@	60
Peas, Sweet garden, # lb.....	3	@	5
Peppers, Green Chile, # box.....	50	@	75
Peppers, Bell, # box.....	50	@	75
Summer Squash, Bay, # large box.....	80	@	85
Tomatoes, # large box.....	40	@	60

POTATOES.

Market has been quiet most of the week under review. A few Burbanks of select quality brought tolerably good figures on local account, but for the ordinary run of offerings the demand was slow and the market weak. Red potatoes were not offered freely, and on limited shipping orders brought tolerably stiff figures. Sweet potatoes were in very fair supply and prices remained at a low range.

Burbanks, Salinas, # cental.....	90	@	1 15
River Burbanks, good to select, # cental.....	35	@	60
River Reds.....	65	@	90
Sweet Potatoes, # cental.....	1 15	@	1 25

The Fruit Market.

FRESH FRUITS.

There are no heavy stocks of choice to select Apples, but common qualities are in more than ample supply, latter kind being in rather poor demand at prices fully as low as have been current at any previous date this season. Choice to select Gravenstein are scarce and in good request at full current quotations, or possibly slightly

higher figures for especially desirable stock needed in the filling of immediate orders. Peaches are not arriving in heavy quantity, but with little other than local demand for present use, prices are without marked improvement. In a small way some fine mountain stock sold above quotable rates. Plums and Prunes were in only moderate receipt, but with limited inquiry, prices for the ordinary run of offerings continued at much the same low range as previously quoted. Bartlett Pears are practically out, and late varieties are receiving more attention, but only at moderate figures. Winter Nells are not yet sufficiently ripe to be desirable for immediate use. Figs remained quotably about as last noted, with receipts and demand both of rather limited volume. Grape market was without special change for either table or wine varieties. Some of the Grapes offering in bulk showed poor quality and such met with slow sale at comparatively low figures. Melons inclined in favor of buyers, being mostly under choice and in lighter request than earlier in the season. Strawberries, Raspberries and Whortleberries were in only moderate receipt, but did not command any material advance over previous figures. Cranberries made a very fair showing, both coast product and Eastern.

Apples, # fancy, 4-tier box.....	1 00	@	1 25
Apples, good to choice, # 50-lb. box.....	60	@	90
Apples, common to fair, # 50-lb. box.....	25	@	50
Cantaloupes, # crate.....	50	@	1 00
Cranberries, Cape Cod, # barrel.....	8 25	@	9 00
Cranberries, Coos Bay, # 60-lb. box.....	—	@	3 00
Raspberries, # chest.....	6 00	@	7 50
Figs, 1-layer box, 30@40c; 2-layer.....	50	@	75
Grapes, Cornicou, # crate.....	75	@	1 00
Grapes, Fontainbleu, # crate.....	30	@	60
Grapes, Isabella, # crate.....	40	@	75
Grapes, Muscat, # crate.....	40	@	75
Grapes, Black, # crate.....	30	@	65
Grapes, Seedless, # crate.....	85	@	1 15
Grapes, Tokay, # crate.....	40	@	75
Grapes, Zinfandel, # ton.....	29 00	@	33 00
Grapes, Mission, # ton.....	26 00	@	28 00
Nutmeg Melons, # box.....	35	@	60
Peaches, # box.....	35	@	60
Pears, Winter Nells, 40-lb. box.....	75	@	1 00
Pears, other kinds, # box.....	40	@	75
Plums, choice large, # box or crate.....	40	@	60
Plums, small, # box.....	30	@	40
Prunes, # crate.....	30	@	60
Pomegranates, # small box.....	50	@	75
Quinces, # box.....	35	@	60
Strawberries, Longworth, # chest.....	6 00	@	8 00
Strawberries, Large, # chest.....	3 00	@	5 00
Watermelons, # doz.....	1 00	@	2 50
Whortleberries, # lb.....	4	@	6

DRIED FRUITS.

The market for cured and evaporated fruits is showing fully as good condition as a whole as at date of preceding review. Dealers are busy in filling orders booked prior to the opening of the season, and are not paying very marked attention to offerings, except of stock particularly desirable as to kind and quality. It is the exception, however, where choice to select qualities are lacking for custom, or fail to command as good figures as have been current at any previous date the current season. Choice to select Apricots are in active request and are bringing an advance on previous rates, with market for high-grade Moorpark especially favorable to the selling interest. Peaches and Pears if choice to fancy quality are also inquired for, and are more easy to place than they are to secure at the full current quotations. Apples are quiet, but are not quotably lower, and it is not likely that choice to select evaporated will be obtainable in the near future at any material declines from existing values. Figs of fine quality, particularly white, are not lacking for custom at full current figures, with likelihood that stocks of choice white pressed will fall short of demand for same this season. The Prune market is not showing very much activity at present, and only for the larger sizes does the market display any noteworthy firmness. Most of the business doing in the four sizes is on the 2 1/2c basis. For choice 40-50's dealers freely bid 4 1/2c., and 30-40's would readily command 5 1/2c., probably 6c., but are too scarce to quote.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	5	@	5 1/2
Apricots, Moorpark.....	7	@	10
Apricots, Royal, good to choice, # lb.....	5	@	6 1/2
Apricots, Royal, fancy.....	6 1/2	@	7
Figs, 10-lb. box, 1-lb. cartons.....	50	@	75
Nectarines, # lb.....	4	@	4 1/2
Peaches, unpeeled, choice.....	4 1/2	@	5
Peaches, unpeeled, fancy.....	5 1/2	@	6 1/2
Pears, halves, fancy.....	6 1/2	@	7 1/2
Pears, halves, choice.....	5 1/2	@	6
Pears, halves, fair to good.....	3 1/2	@	4 1/2
Plums, Black, pitted.....	4	@	4 1/2
Plums, Red and Yellow.....	5	@	5 1/2
Prunes, Silver, good to fancy.....	3 1/2	@	4
Prunes, in bags, 4 sizes, 2 1/2@2 3/4; 40-50s, 4 1/2@4 3/4; 50-60s, 3 1/2@3 3/4; 60-70s, 3 3/4@3 1/2; 70-80s, 2 1/2@2 3/4; 80-90s, 2@2 1/4; 90-100s, 1 1/2@1 3/4c.			

COMMON SUN-DRIED.

Apples, sliced.....	4	@	—
Apples, quartered.....	3 1/2	@	—
Figs, White, in bulk.....	3 1/2	@	4
Figs, Black, in sacks, # lb.....	2 1/2	@	3 1/2
Plums, unpeeled, # lb.....	1 1/2	@	2 1/2

RAISINS.

In the raisin market the Association prices remain as fixed in the opening announcement. There is a fair movement outward. Some Eastern buyers, however, are kicking about the price, and also claim that they are being discriminated against in the matter of rebates being granted to foreign purchasers, amounting to 1c. per lb. reduction in card rates to Canada and Mexico and 2c to Australasia and Oriental countries. The pack promises to be large, and owing to the favorable weather, is showing more than ordinarily fine quality.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5c # lb; No. 3 crown do, 5 1/2c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/2c; No. 2 crown London Layers, 20-lb boxes, \$1.30 # box; No. 3 crown do, \$1.40; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Debasas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

Market has developed no radical changes since last report. Late Valencia Oranges are offering in very fair quantity for this late date. Not many are required to satisfy present demand at full figures asked. Lemons are being offered at generally unchanged rates, with supplies more than sufficient for current requirements; the market for other than most select is lacking in firmness. Limes are in reduced stock and are held at an advance of 50c per 1,000.

Oranges, Late Valencia, # box.....	3 50	@	4 50
Lemons—California, select, # box.....	2 75	@	3 00
California, good to choice.....	1 75	@	2 50
California, common to fair.....	1 00	@	1 50
Limes, Mexican, # 1000.....	5 00	@	5 50

NUTS.

Almond market is showing steadiness, with a fair movement, and little or no likelihood of the acceptance of lower figures than now current being necessary to effect a clean-up. The Walnut market is firm, and there is active inquiry for early deliveries. Carload lots of No. 1 softshell are quotable at 10 1/2c, and higher figures are being asked. Peanut market is steady, with stocks of only moderate volume.

California Almonds, shelled.....	16	@	20
California Almonds, paper shell, # lb.....	11 1/2	@	12 1/2
California Almonds, soft shell.....	9	@	10
California Almonds, hard shell.....	7	@	8
Peanuts, California, fair to prime.....	4 1/2	@	5 1/2
Peanuts, Eastern, hand-picked.....	6	@	6 1/2
Walnuts, White, soft shell, # lb.....	10 1/2	@	11 1/2
Walnuts, White, standard, # lb.....	9 1/2	@	10

WINE.

The wine market shows firmness, but there is little doing in a wholesale way, owing to absence of noteworthy offerings from first hands. Dry wines of last year's vintage are quotable nominally at 23@28c per gallon for fair to choice, with selections commanding higher figures. Sales of extra select to special custom are noted up to 40c, but this is a case of where quality is sought after regardless of price. Shipments of wine the past week include 65,172 gallons per Panama steamer for New York. The ship Earl of Dunmore, clearing Monday for London, took 14,450 gallons. The steamer Alameda, sailing on 4th inst., carried 7960 gallons and 52 cases for Honolulu. Wine grapes are in good request and are bringing good prices. Dry wine grapes are ranging from \$23@35 per ton, as to variety and quality, district and location, the top figure being an extreme for select white stock. Grapes for sweet wines are quotable at \$12@20 per ton, best figures for choice white and lowest price for Tokay culls and second crop Muscats.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	110,081	1,719,296
Wheat, centals.....	352,341	1,573,304
Barley, centals.....	101,218	2,597,197
Oats, centals.....	34,161	275,981
Corn, centals.....	400	15,655
Rye, centals.....	2,861	71,349
Beans, sacks.....	36,234	112,938
Potatoes, sacks.....	25,970	330,474
Onions, sacks.....	5,838	80,352
Hay, tons.....	3,617	60,918
Wool, bales.....	3,036	21,204
Hops, bales.....	2,916	4,787

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	131,104	1,209,408
Wheat, centals.....	281,576	1,439,242
Barley, centals.....	102,239	1,948,104
Oats, centals.....	444	10,373
Corn, centals.....	872	11,186
Beans, sacks.....	474	15,002
Hay, bales.....	5,932	44,530
Wool, pounds.....	9,900	382,555
Hops, pounds.....	487	46,572
Honey, cases.....	489	1,208
Potatoes, pack's.....	1,374	18,563

Eastern Dried Fruit Market.

NEW YORK, Oct. 8.—Evaporated apples are somewhat lower with smaller grades in poor demand, while the more attractive fruit is held slightly higher. Common are quoted at 5@6c; prime, 6c; choice, 7@8c. Prunes continued firm and in good demand at 3 1/2@7 1/4c for all grades. Apricots show firmness, but unchanged at 7 1/2@10 1/2c in boxes and at 6 1/2@10c in bags. Peaches are a shade more active and firmly held at 12@16c for peeled and 7@10 1/2c for unpeeled.

Pacific Rural Press Agents.

The following are among the authorized agents for the PACIFIC RURAL PRESS:

San Joaquin Valley—W. C. Lee, of Traver, traveling agent.
Woodland—"Home Alliance" office.
"Woodland Daily Mail" office.
San Jose—Wm. Kelly.
Hanford—F. V. Dewey, of the "Journal."
Dixon—Mrs. Grace Norman.
Davisville—W. H. Scott, of the "Enterprise."
Black—Postmaster.
Arbuckle—W. A. Sublet.
Maxwell—Mrs. L. A. Sutton, P. M.
Willows—John J. West, P. M.
Orland—T. Q. Birch, at P. O.
Chico—Willie Mittel.
Biggs—W. D. Parker.
Live Oak—J. A. Wilkinson, P. M.
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San Joaquin Co.—C. E. and R. B. Freeman, Lodi.
Heldsburg—F. W. Cooke, of the "Tribune."
Geyserville—H. M. Hastings, of the "Gazette."
Reedley—F. S. Knauer, P. M.
Dinuba—H. Hurst, of the "Alta Advocate."
Exeter—Fred Page, of the "Sun."
Lindsay—H. W. Dockham, of the "Enterprise."
Porterville—Lumley Bros., of the "Enterprise."
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Brentwood—Oscar Smith.
Atwater—J. B. Osborne.
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Grangeville—Mrs. J. M. Anderson, P. M.
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Knightsen—Lillian M. Barkley.
Selma—J. F. Crowder.
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Paint.

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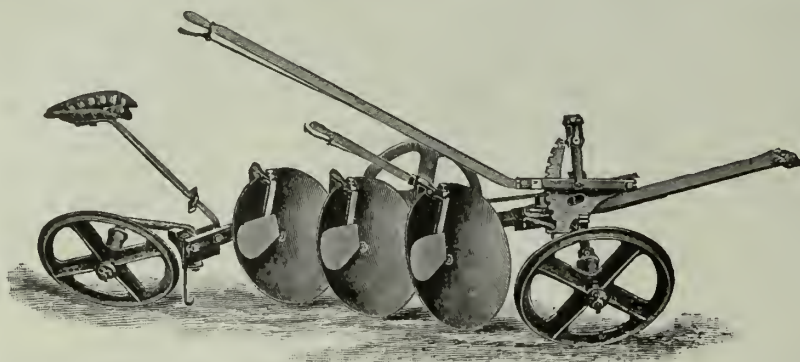


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Covers Weeds, Stubble, etc., to Perfection.

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The Discs will outwear several sets of shares and no expense for sharpening or time lost at blacksmith shop.

There are no FANCY FEATURES on this plow to make expense which will offset this saving.

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4-foot 20-inch, 6-foot 20-inch, 8-foot 20-inch.
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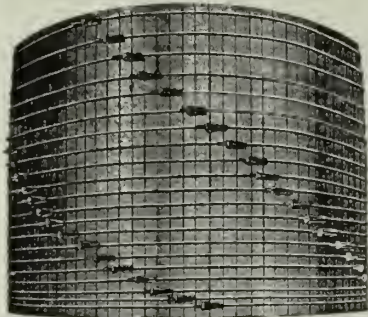


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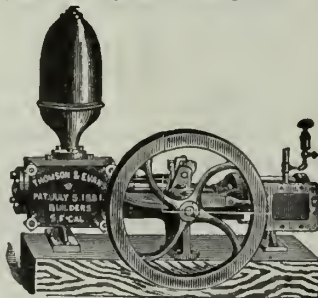
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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.



“Canton Clipper” 2 Furrow Gang Plow.
10-inch, 12-inch and 14-inch.
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Tuttle's American Condition Powders—A specific for impure blood and all diseases arising therefrom. **TUTTLE'S FAMILY ELIXIR** cures rheumatism, sprains, bruises, etc. Kills pain instantly. Our 100-page book, "Veterinary Experience," FREE. **Tuttle's Elixir Co.**, 88 Beverly St., Boston, Mass. 487 O'Farrell St., San Francisco, Cal. Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief, if any.

ON THE ROAD.

Some Items of News.

Written for the PACIFIC RURAL PRESS by F. P. COOK.

VISALIA.—The Earl Fruit Company shipped their last car of green fruit from this district Sept. 25, making a total of 136 carloads from this district this season. Mr. Rayburn, who has been acting as overseer at Visalia for the past three seasons, says that he is to remodel the Earl Company's citrus packing house at Porterville and put in two of his big graders.

REEDLEY'S RISE.—It is a pleasure to record that the late fire at Reedley, in Fresno county, instead of injuring the town, seems to have been but the beginning of its real growth and success, as fires often prove to be in the history of towns. The town is rapidly recovering from the shock. The burned district is being rebuilt, old firms are resuming business and new ones starting. Besides several frames erected, three brick buildings are nearing completion and others are planned. The streets far out into the country have been sprinkled with oil, which is pronounced a decided success. Rural free delivery will be inaugurated Oct. 1st. Several large holdings have been subdivided and are now on the market in small tracts on reasonable terms. Altogether Reedley seems to be at the beginning of success.

The conditions among the farmers and fruit raisers are most propitious. The continued good drying weather is fortunate for producers of fruit, raisins and alfalfa, of which there are enormous crops. The summer having been unusually cool, the growing season has been much prolonged, resulting in increased yield. Everybody is as busy as possible, making the best of the favorable conditions. Raisins are being delivered to the packing house of Porter Bros., grain is still coming into the warehouses, grapes to the winery, and the last cutting of alfalfa has been cured.

The situation of Reedley—upon both the S. P. and Santa Fe railroads—affords excellent traveling and shipping facilities—eleven trains daily and four daily mails—and its soils, free from alkali, and of such formation as to provide excellent drainage and freedom from the water-soaking and rise of alkali which hinder the progress of some other sections, give it an advantage in production which cultivators of the soil generally are not likely to overlook.

SONOMA AND MARIN COUNTIES FAIR.—The street and agricultural fair at Santa Rosa by Sonoma and Marin county people this year was an excellent exhibit of enterprise, products, and art in arranging them by one of the most rich, peculiar and enterprising parts of our State.

This show, which was in several sections, was everywhere brilliant with decorations, sufficiently original in design of arrangement to be interesting, and sufficiently extensive and varied to be thoroughly representative of Sonoma and Marin counties and one of the best agricultural fairs in the State this year.

The principal departments of exhibit, each in its own location, were: The main street pavilion, devoted to the

agricultural, horticultural and viticultural displays; art and fancy work; stock and poultry show; the Woman's Improvement Club headquarters; the street performances; features contributed by the Elks Society; and the "Midway" shows.

It was a pleasure to notice that the old-fashioned culinary art again had a place among the exhibits of the accomplishments of human beings in life.

The stock and poultry show was a credit to counties so well able to make one in that line, and we hope to speak further of it later.

The "Midway" shows included the Maid of the Mistletoe, the Parisian Wonder, Girl From Up There, Juvenile Congress, Old Plantation. There were also the Famous Glass Blower, the Mermaid, Bert Bradlee's Happy Hooligan, the Giant Skeleton, the Trained Bird Show, the Cycle Whirl, and the Woman's Improvement Club merry-go-round, operated for charity.

The attendance was large, and the fair in every way a success.

A few of the principal prizes in a horticultural way were awarded as follows:

Best display of agricultural products—First, Bennett Valley Grange; second, Horticultural Society; third, Charles Riverman; fourth, Walter Armstrong.

Best exhibit of fruits and grains in glass—Colonel M. L. McDonald.

Best exhibit of products raised by one person on one farm—First, R. G. Sutherland; second, Charles Riverman.

Most striking design of fruit—First, Mrs. J. P. Berry; second, Walter Armstrong.

Largest and best exhibit of grapes grown in one vineyard—Fountain Grove Vineyard Co., nineteen varieties; second, A. W. Arnold.

Best apple exhibit, single variety—Walter Armstrong.

Best apple exhibit, not less than ten varieties, ten of each variety—Pleasant Hill Orchard Co.; second, M. L. McDonald.

WRITE ME.

If you are completely worn out, tired, sick, despondent, nervous and feel that life is a burden, I want you to write to me to-day. I know that I can improve your health and by doing so bring you happiness. I am the manufacturer of Baldwin's Allopathic Tablet Remedies which consist of thirty-five different cures in tablet form. From this list I can select a specific for almost any ailment you may have. I can send a remedy that will cure Neuralgia, Rheumatism, Cold, Headache, Piles, Kidney Trouble, etc. I have one remedy that will cure a multitude of ailments if they arise from a disordered digestion, such as chronic constipation, biliousness, headache, dizziness, etc. This remedy is known as Baldwin's Health Tablets. I want to become acquainted with you and show you that my remedies are just what I represent them to be. If you will send 25c. I will send you a bottle of Baldwin's Health Tablets, containing 50 doses, by mail prepaid. If they do not benefit you more than any other remedy you ever used I will refund the price paid. The purchase of one or more of these remedies entitles you to medical advice by our physician free of charge. I will also send you a sample of any of my remedies and a Medical Manual free.

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is over, and now you can have your fence shipped the day your order is received. Try us on a "Rush Order," and put it up this Fall.

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The Sharples Tubular Separators and the others.

The Sharples has a plain, simple, effective, easily washed bowl that can't get out of order, because it has no complicated parts. The others, without exception, have complicated cones, discs, partitions and graters, difficult to wash and frequently out of order.

The difference is vast. It's the difference between success and failure.

"Talk" won't explain the difference. But thought and judgment and experience will. We have a handsomely illustrated paper that will help you, or we'll send you a Sharples Tubular and let you try it for yourself.

Sharples Co., Chicago, Ill. P. M. Sharples, West Chester, Pa.



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"When ye hae naething else to do stick in a tree. It will be growing when ye're sleeping."

We are the originators and growers of the famous **Calimyrna Fig** trees, and agents for the world renowned F. Richter, (Montpellier, France.)

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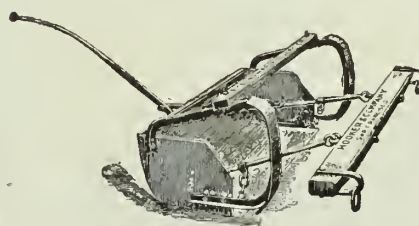
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"Fresno" Improved Scraper.

3 1/2-foot, 4-foot and 5-foot.

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Potash

in proper proportion is an essential aid to success.

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BRANDYWINE AND EXCELSIOR PLANTS NOW READY.

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CATALOGUE AND PRICES ON APPLICATION.

OREGON NURSERY CO.

SALEM, OREGON.

Black Leg.

It is highly probable that there will be a good deal of black leg this fall, as there are a number of spring calves that are in good condition and the pasture is good. It is a well-known fact that calves in good condition are much more likely to have black leg than if they are poor, as in times of drought. Therefore, the prudent cattleman will vaccinate his calves and protect them against black leg. It is important to make a careful selection in the vaccine, and the preparation that has stood the test of time is that furnished by the Pasteur Vaccine Co. What they call "blacklegine" is ready for use as sold, each dose is separate and it is as easy as possible to use with the blacklegine outfit that only costs 50 cents. "Blacklegine" has been a tremendous success during the last few years, though the Pasteur Co. still furnish the original and genuine vaccine in the old powder form, as some men still prefer it.

"A Little Cold, You Know," will become a great danger if it be allowed to reach down from the throat to the lungs. Nip the peril in the bud with Allen's Lung Balsam, a sure remedy containing no opium.

Breeders' Directory.

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HOLSTEINS—Winners over Jerseys of EVERY butter contest at State Fairs for last six years. Aged, 4-yr., 3-yr. and 2-yr.-old classes, except last on 2-yr.-old in 1895. Last year every butter prize awarded won by my herd, except 2nd for 2-yr.-olds, 21 Jerseys and Durhams competing. F. H. Burke 30 Montgomery St., S. F.

JERSEYS, HOLSTEINS & DURHAMS. Bred specially for use in Dairy. Thoroughbred Hogs, Poultry. William Niles & Co., Los Angeles, Cal. Breeders and Exporters. Established 1876.

A. J. C. C. JERSEYS. Service bulls of noted strains. Joseph Mailliard, San Geronimo, Marin Co., Cal.

SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

PETER Saxe & Son, Lick House, S. F., Cal. Importers and Breeders, for past 21 years, of every variety of Cattle, Horses, Sheep and Hogs. Correspondence solicited.

JERSEYS—The best A. J. C. C. registered prize herd is owned by Henry Pierce, S. F. Animals for sale.

SWINE.

THOMAS WAITE, Perkins, Cal. Prize-winning Berkshires. Pigs for sale.

SUTTON BROS., Lodi, Cal. For Sale. 1 Registered Poland-China Boar and 2 Glts. 5 months old.

POLAND CHINAS.—Call and see our show herd at State Fair. Bred sows for sale. S. P. Lindgren & Sons, Kingsburg, Cal.

BERKSHIRE, POLAND-CHINA & DUROC HOGS. Choice; Thoroughbreds. Wm. Niles & Co., Los Angeles, Cal. Established in 1876.

P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of Shorthorn Cattle and Poland-China Hogs.

ASHLEY BROS., Linden, San Joaquin Co., Cal. Breed Poland-China and Berkshire Hogs.

BERKSHIRE AND POLAND-CHINAS, both sexes. C. A. Stowe, Stockton.

SHEEP.

R. H. CRANE, Santa Rosa, Cal. Breeder and Importer of South Down Sheep.

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WELLINGTON'S IMPROVED EGG FOOD for poultry. Every grocer and merchant keeps it.

SANTA TERESA POULTRY FARM, Eden Vale, Santa Clara Co., Cal. Illustrated catalogue with show record, free. Agents Eclipse Aluminum Leg Bands; sample 2 cts.

MEAT MEAL.—Best quality, lowest price. White Leghorn eggs. A. Warren Robinson, Napa, Cal.

WILLIAM NILES & CO., Los Angeles, Cal. Nearly all varieties chickens, geese, ducks, peafowl, etc.

BRONZE TURKEYS. Ed. Hart, Clements, Cal.

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DON'T STOP NOW. My system of feeding enables you to successfully RAISE CHICKS ALL YEAR ROUND. Write to-day for particulars. Geo. H. Croley, 505 Sacramento St., San Francisco, Cal. Mention Pacific Rural Press.

FOR SALE.

200 Percheron Coach and Trotting-Bred Horses,
250 Shorthorn and Double-Standard Polled Durham Cattle.

E. F. KLEINMEYER, LOS ANGELES, CAL.

Patrons of Husbandry.

Tulare Grange.

TO THE EDITOR:—Tulare Grange held its regular semi-monthly meeting on the 4th. After the routine business of opening and the partaking of one of its usual social and enjoyable lunches, the special committee, appointed at a previous meeting on subjects which this Grange desires to bring before the State Grange, reported. After the reading of each item, and the consideration of it by the Grange, the report was adopted and ordered sent to the State Grange.

The National Grange subject for October was taken up, "In What Way Does the Grange Improve Its Members?" It was very freely discussed, all members present expressing themselves. Among the benefits all admitted that the Grange meetings afforded the best opportunity for social gathering; the lunch aided in promoting the social part of it very much; the meetings afford opportunities for consideration of subjects of interest to farmers and train them in expressing themselves and hearing others express themselves, thereby confirming and correcting their own views and opinions; the monthly subjects considered are usually timely and the question box gave every one an opportunity to have his or her question discussed and considered. It was agreed that, if more of the members would put their views on paper on subjects with which they are most familiar, it would be of mutual advantage. It was agreed by all that the Grange does improve its members in more ways than were mentioned at that meeting.

The alternative subject for October was also taken up, "Is There Any Excuse for the Officers of the Grange Not Being Able to Confer the Degrees Without Reading From the Ritual?" The Master and the Overseer of the Grange being unavoidably absent, no officer present gave any excuse for the defect, and the reasonable conclusion was that there is no excuse for it.

The questions drawn from the question box were: 1. When is the best time to prune? 2. When should apricots be pruned? 3. When is the best time to irrigate? In answering the first and second questions the opinion seemed to prevail that all pruning, reference being had to the climate and soil of Tulare, should be done when the tree is dormant; that early pruning is not advisable every year, as it brings on an early growth which may be caught by a late frost, and consequently late pruning, before the foliage puts out (as it retards early growth) will be safer. This applies to deciduous fruits, apricots included. As early irrigating promotes early growth, it has, for that reason, the same element of danger from frost that early pruning has, although many good orchardists practice and recommend early irrigation. There is danger of scalding if irrigation is done during the heat of the day in hot weather; it is best done in the evening. Successful alfalfa growers thoroughly irrigate their alfalfa ten days or two weeks before mowing and find the results good. The question, When should Egyptian corn be cut for forage purposes? seemed to elicit the opinion that the best time is before the foliage dries and after the head is formed.

The subject for next meeting's consideration is the last of the six months' programme of Tulare Grange—"Idleness is a vice." The Government should see that every citizen is employed, and, if need be, provide employment for all needing it. This, at first sight, seems a pretty bold assertion, however, but few will deny the first part of it, and an impartial consideration of it by Tulare Grange will do no harm.

A committee of three was appointed by the Worthy Master to report, at next meeting, a programme of monthly subjects for Grange consideration.

J. T.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

THE VETERINARIAN.

Answers to Inquirers.

By CARL W. FISHER, D. V. M., of San Mateo.

ILLS OF THE HORSE.

TO THE EDITOR:—Will you please answer these two questions through the columns of the PACIFIC RURAL PRESS?

1. I have a mare that is bothered with her urine; it is of a muddy color and foul smelling; from her hips down toward her belly it seems to be real hard to the touch. What is best to do for this?

2. What is a sure cure for worms in a horse?—A SUBSCRIBER, Lincoln, Cal.

Frequently the urine from horses is of a dark color and may show a sediment, although this is no serious trouble. The following will gently stimulate the kidneys and change the appearance of the urine. Give your mare a tablespoonful of the following once a day in grain; feed for four days, then omit for a few days; afterwards give an occasional dose:

Potassium nitrate, 5 ounces.
Pulverized digitalis leaves, 5 drachms.
Pulverized licorice root, 1 ounce.
Mix and give as above.

Cure for worms depends upon the kind of worms, as there are several. Of the large round worms, the *Oscaris megalocephala* in the small intestines is the most common. For such, fast the horse twelve hours, then give the following:

Creolin, 1 teaspoonful.
Oil of turpentine, 1 ounce (2 tablespoonfuls).
Pure raw linseed oil, 1 pint.
Follow by a bran mash. Give a light feed of hay for two days, then repeat the dose.

The most common small pinworm is the *Oxyuris curvula*, which is in the posterior part of the bowels. An enema, rectal injection, is most effectual. Either creolin or sheepdip, 1 tablespoonful to three quarts of water, injected with a syringe or a piece of rubber tubing 3 feet long and a tin funnel will do. Repeat this treatment in three or four days. It would be well to follow with the oil treatment as for the large worms.

CARL W. FISHER, D. V. M.
San Mateo, Oct. 4, 1902.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING SEPT. 23, 1902.

709,733.—MINING DREDGE—Barton & La Bud, Oakbar, Cal.
709,812.—MOUTH MIRROR—Bennett & Tbatcer, S. F.
709,592.—TRACTION ENGINE—D. Best, San Leandro, Cal.
709,571.—FURNACE—W. N. Best, Los Angeles, Cal.
709,737.—CONVEYER—M. Bradfield, Los Angeles, Cal.
707,742.—WRENCH—C. Busby, Fossil, Or.
709,595.—GLOVE—R. N. Carson, S. F.
709,534.—SHOE LACING HOOK—N. H. Clark, S. F.
709,476.—COOKING CABINET—H. Faschlan, S. F.
709,601.—PLOW—A. Horner, Paafail, Hawaii.
709,832.—ORE CRUSHER—C. C. Lane, Los Angeles, Cal.
709,782.—OIL BURNER—L. K. Leaby, Los Angeles, Cal.
709,547.—CONVEYER—G. W. Menefee, Berkeley, Cal.
709,609.—LOADING CHUTE—L. Rosenfeld, S. F.
709,725.—BOOKKEEPING—C. Seltz, Seattle, Wash.
709,803.—OIL BURNER—J. P. Simonsen, Oakland, Cal.
709,561.—POUCH—Smithline & Zalscr, Los Angeles, Cal.
709,520.—AIR COMPRESSOR—E. Y. St. Croix, Madrone, Wash.
709,613.—FRUIT GRADER—F. Stebler, Riverside, Cal.
709,562.—FRUIT CLEANER—Swan & Richardson, Ontario, Cal.
709,567.—CLUTCH—E. Turney, Portland, Or.
709,806.—INDICATOR—H. S. Tittle, Los Angeles, Cal.

OAKLAND POULTRY YARDS,
Breeders of all the Leading Varieties of Fowls.
1817 Castro St., Oakland, Cal. Manufacturers of Pacific Incubator and Brooder. Send for Catalogue.

FLEMING'S LUMP JAW CURE



LUMP JAW

Easily and thoroughly cured. New, common-sense method, not expensive. No cure, no pay. FREE. A practical, illustrated treatise on the absolute cure of Lump Jaw, free if you ask for Pamphlet No. 96. Fleming Bros., chemists, Union Stock Yards, Chicago, Ill.



"South Bend" Chilled Plow.

Vehicle and Implement Catalogue sent on application.

HOOKE & CO., SAN FRANCISCO.

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of having the best large herd of swine in the State. We won 22 ribbons at the State Fair, which is the largest number in our history; and best of all, we were awarded a **SPECIAL GOLD MEDAL** for excellence of exhibit, the first one ever awarded to a swine exhibit. We have more first-class animals in our herd than ever before and the young stock now ready to ship are fine specimens. We call our pigs closely and will send out only those we think will prove good breeders and be a credit to any herd. Write for what you want and we will name prices.

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FRUIT MARKETING

The Healdsburg Prune Growers' Claim.

TO THE EDITOR:—The statement regarding the protest of the Healdsburg growers, which is in your paper of Sept. 27, 1902, page 194, is slightly incorrect. It is District No. 2 that claims 28,000 instead of 9000 pounds of prunes, but the growers of Healdsburg do protest, most emphatically, against the way the payments have been made up to date. We claim that all members of the California Cured Fruit Association should receive the same price for the same grade and quality, less the differential of $\frac{1}{2}$ of a cent in District No. 1 and $\frac{1}{4}$ of a cent in District No. 2 in favor of District No. 3. We claim that there is but one California Cured Fruit Association, but the payments up to date have been made as if there were three.

Enclosed I send a true copy of the dividend tables, which tells the whole story and upon which we base our protest. By these tables you will readily see the different prices paid on the same grade and quality in the different districts.

I will be very grateful to you if you will print this letter and the three dividend tables, as I think that the growers do not understand the way payments have been made.

A. E. BURNHAM.

Lambert, Sonoma Co.

The following is the dividend sheet to which our correspondent refers:

1900 CROP.

DISTRICT NO. 1—DIVIDEND TABLE NO. 7.

Prices paid per pound to date.

Size.	1st Quality.	2nd Quality.
30-40	3.760855	
40-50	3.523019	0.566114
50-60	2.834553	1.204552
60-70	2.324863	0.343792
70-80	1.576204	0.068888
80-90	0.974971	
90-100	0.912209	
100-120	0.669355	
120 up	0.487533	0.013125
Ungraded	0.155480	

DISTRICT NO. 2—DIVIDEND TABLE NO. 7.

30-40	1.872391	
40-50	3.102634	
50-60	2.342270	0.533234
60-70	2.307091	0.854349
70-80	1.812549	0.270711
80-90	1.447543	
90-100	1.011943	
100-120	0.561656	
120 up	0.290992	0.383290
Ungraded	0.262308	

DISTRICT NO. 3—DIVIDEND TABLE NO. 7.

20-30	4.217122	
30-40	5.340234	
40-50	4.309628	1.911700
50-60	3.149734	1.964603
60-70	2.636249	1.775487
70-80	1.789259	0.729835
80-90	1.334650	1.365718
90-100	0.939883	0.275279
100-120	0.887200	0.638437
120 up	0.504173	0.459326
Ungraded	0.698279	

California Raisin Growers' Association.

TO THE EDITOR:—After a long period of negotiation with the numerous packers, lasting several months, the Raisin Growers' Association has emerged in the strongest position it has ever occupied during the five years of its existence, and with every prospect of a long and prosperous career.

There are now no less than forty-nine commercial and co-operative packing houses, belonging to thirty-five different owners and situated in various parts of the State, all of which are leased to the Association.

It is as yet too early to estimate with any precision the present crop, but good authorities place it at not less than 100,000,000 pounds, which quantity has only once been exceeded, viz., in 1894, when it was 3,000,000 pounds greater than the above estimate. Last year the crop only amounted to 72,000,000 pounds.

Owing to the members of the Association having agreed on Sept. 29th, by a vote of 831 to 31, to increase the borrowing powers from \$100,000 to \$500,000, the directors have been able to announce that they will make advances equal to 3 cents a pound in the sweat

box on standard raisins on deliveries made before Nov. 1st.

The prices fixed on Sept. 27th (subject to change without notice) for standard brands of raisins, f. o. b. at common shipping points, are as follows:

Brand.	Price In Boxes of 20 Pounds.	Amount of Advance per lb in Sweet Box
2-crown London Layers.	\$1.30	4
3-crown " "	1.40	4
4-crown Fancy Clusters.	2.00	4
5-crown Dehesa " "	2.50	5
6-crown Imperial " "	3.00	5

Loose Muscatels.	Price In Cases of 50 Pounds.	Cents per lb.
2-crown	5	2½
3-crown	5½	3
4-crown	6	3½

Seedless.	Price In Cases of 50 Pounds.	Cents per lb.
Loose Muscatels	5	2½
Sultanas	5	2½
Thompsons	5½	2½

Compared with the previous four years the prices are as follows:

Layers.	—Per Box of 20 Pounds.—	1899.	1900.	1901.	1902.
London Layers,					
2-crown	\$1.50	\$1.50	\$1.25	\$1.30	
London Layers,					
3-crown	1.60	1.60	1.35	1.40	
Fancy Clusters,					
4-crown	2.00	2.00	1.75	2.00	
Dehesa Clusters,					
5 crown	2.50	2.50	2.50	2.50	
Imperial Clus'rs,					
6 crown	3.00	3.00	3.00	3.00	

Loose Muscatels.	—Cents per Pound.—	1899.	1900.	1901.	1902.
2-crown	5½	6	3½	5	
3-crown	6	6½	4½	5½	
4-crown	6½	7	4½	6	
Seedless	5	6½	4½	5	

I send you the above schedule because the figures hitherto published were not complete.

GEORGE ROBERTSON.

Fresno, Oct. 3.

THE FIELD.

Turnip Seed Crop Proposed for Salinas Valley.

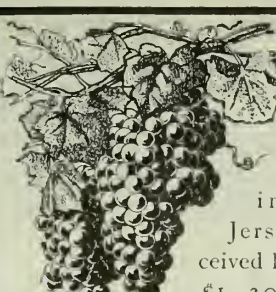
The Braslan Seed Company of San Jose are endeavoring to promote the growth of turnip seed in the Salinas valley. They claim that the locality is well suited to the crop and that there would be an advantage in rotation with sugar beets. However this may be, what they say in the Salinas Index about the way to grow the crop is interesting:

Watsonville, Salinas, Pajaro, Castroville and all of that section is especially adapted for the producing of turnip seed on account of the heavy, foggy weather. The turnip seed should be planted on the ground from which the best crops of beets are had, that is the heavy, rich bottom lands.

The seed should be planted the latter part of November in drills 36 inches apart. This will give plenty of room for the development of the turnip and its seed-stalk and will also allow plenty of room for the cultivation. After the turnips have come up to a size about as large as a walnut, they should be thinned out in the row about 6 inches. This can be done by using a hand hoe, cutting them out in the row.

The crop of turnip would ripen and be ready for harvest in June, and the crop will yield under good cultivation from 1500 to 2500 pounds of seed per acre, which contracts at 5 cents per pound. The producer agrees to plant during the month of November, in drills, 36 inches apart between the rows, and agrees to thin out the turnips in the rows to a distance of 6 inches; to cultivate the crop in a farmer-like manner, to harvest, clean and deliver the seed in a marketable condition.

The contractor agrees to furnish the necessary seed stock for planting free of charge and to accept the entire product of merchantable seed produced from the specified acreage at 5 cents per pound f. o. b. cars.



A man in New Jersey received last year \$1,200 for grapes grown on less than one-quarter of an acre.

The value of

NITRATE OF SODA

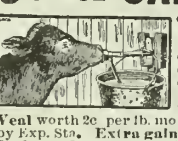
in increasing the quantity and quality of grapes is explained in a paper by

Prof. PAUL H. WAGNER,

copies of which will be sent free.

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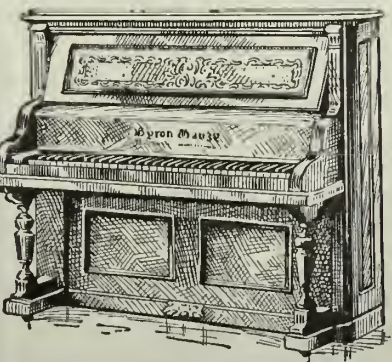
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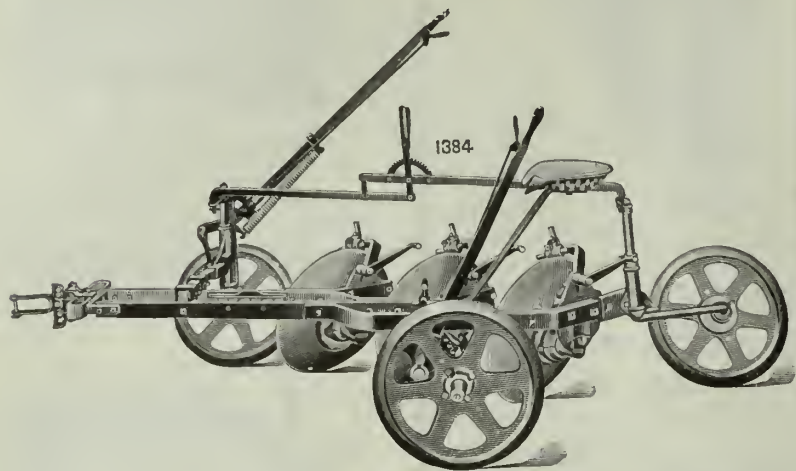
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on all disc plows is the disc bearing. In plowing the pressure is all on the lower half of the disc, and when a simple bearing through the center of the disc is used the leverage against it is great and in hard, dry plowing will wear out very quickly; the discs lose their proper set, becoming more perpendicular and will not enter the ground as they should. The DEERE DISC overcomes this difficulty by using a dust proof, ball-bearing disc with bearings ten inches apart; this reduces the leverage and does away with the friction. Another important point is a landing device which will control the plow independent of the team. These features are to be found in the DEERE DISC PLOWS and no others.

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SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
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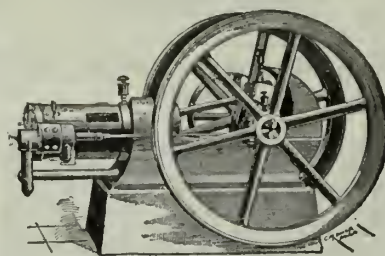
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THE PACIFIC RURAL PRESS

CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 16.

SAN FRANCISCO, SATURDAY, OCTOBER 18, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Turquoises in Arizona and New Mexico.

Gems and precious stones have been near to the human heart in all ages. Excavations in Egypt now being pushed in the name of the University of California, through the bounty of Mrs. Phoebe A. Hearst, are bringing to light tombs of peoples who lived even before history began in that most ancient country—tombs made for people who lived long before the pyramids were built and whose earthly careers closed about 5500 years ago. In that dry climate these ancient remains were found so well preserved, even without mummy-making processes which came into vogue later, that the causes of death could sometimes be told by the view of the internal organs. With these remains were necklaces and other ornaments, which show that personal decoration is a pristine practice of mankind. In recent investigation of the tombs of the prehistoric peoples of America the same fact is shown. At present systematic research into the remains of the cliff dwellers in

Colorado, Utah and Arizona is disclosing many interesting facts to the archaeologist. One fact which especially attracted our attention was the partiality of these people to the turquoise. They lived about 2000 years ago and had only stone implements, and yet they could work turquoise into ornaments of great beauty. The masses of such ornaments in a few graves would seem to suggest that the multi-millionaires of that day gathered wealth in that form.

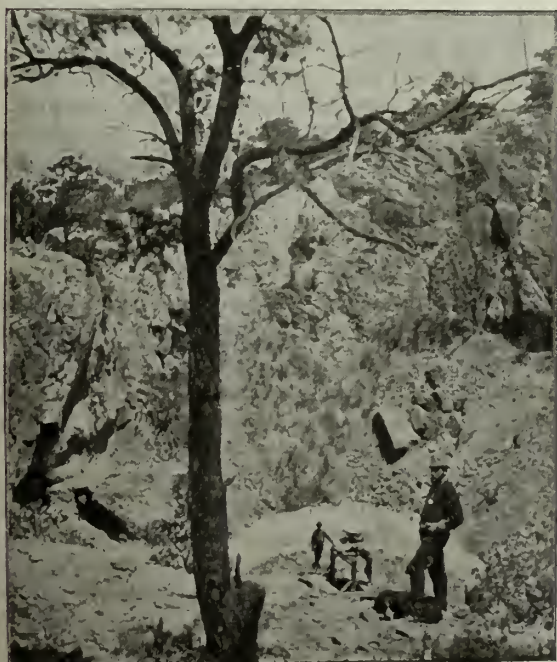
Another interesting fact, which we illustrate by the engravings on this page, is that the same ground which the prehistoric cliff dwellers worked over for turquoises is being mined at the present day. There is a piece of country in Santa Fe county, New Mexico, about 200 acres in extent, every foot of which has been worked over for turquoise. The Indian method was crude, the only implement being a stone hammer. The New Mexican miner of to-day follows the lead of his Indian predecessor in these old mines, but goes about 10 feet deeper, there finding his purest gems. The Indians had a primitive method of



Turquoise Prospectors in New Mexico.



Turquoise Mountains South of Mineral Park, Arizona.



The Chaleha Turquoise Mine in New Mexico.

blasting turquoise rock. Over the mass they would build a hot fire and then dash water upon it, causing the rock to crack. Then the stone hammers came into play and the ore was crushed into small pieces, then polished as beads, which were drilled, strung and worn as ornaments or charms.

The large engraving on this page shows turquoise mines near Mineral Park, Arizona. The mountain shown in the picture has shafts sunk in a number of places by ancient miners of the stone age, and stone hammers and other tools are found scattered over the surface. The smaller pictures are illustrative of the turquoise industry of the present day.

It seems from current reports that the railroads are put to the utmost of their resources to move the amount of California fruit which is now pressing for shipment. One railway, which bunched up about 2000 cars for the expected rush, tells an exchange that the business surpasses anything anticipated. Canned fruits and vegetables are moving as well as dried fruits and nuts, and it is taking all the cars that the railroads can furnish to meet the wishes of shippers. At San Jose shippers have had trouble in getting help to pack dried fruit. As the work in the orchards and driers fell away, the laborers have come

to town and gone to work in the packing houses. This means that the produce is now being packed in vast quantities, and as fast as packed the shippers wish to move it out. This in part explains the tremendous sudden increase in the volume of business offered. Much the same condition prevails at other shipping points. There is a busy time ahead of the freight handlers, evidently.

REGARDING proper thinning of fruit, a large grower and handler remarks: "The money is in good fruit, not bad. A peach that will weigh a pound will sell to a canner for a cent, whereas three peaches that will only weigh a pound, taken altogether, will not sell to a canner at all, and have to be dried in order to be marketed. The cutters want increased wages for cutting them, the fruit sells for a cent less per pound when dried than better fruit, and the tree is exhausted growing the two extra pits and the crop is not likely to be remunerative at all. That's the difference. Fortunately, the peaches are averaging large this year where properly thinned."

GEORGE C. ROEDING of Fresno has begun a suit for \$25,000 damages against a firm of fig packers because they are using the brand of "Calif-Smyrna," which Mr. Roeding seems warranted in claiming to be an unjustifiable imitation of his copyrighted name "Calimyrna." Mr. Roeding claims also that the figs sold are White Adriatic and not Smyrna figs and are inferior in quality, and the general esteem and reputation of Calimyrna figs is being damaged. Mr. Roeding has been very enterprising in his development of the true Smyrna proposition, and whatever there is in his name he is certainly entitled to.

For the encouragement of those who look upon the tourist crop as one of the great resources of California, it may be stated that of 954,000 foreign tourists who visited Italy during the year ended June 13, 65,000 were English. It is estimated that the visitors spent \$70,000,000 during their stay in the country. This amount is equal to the value of the fruit, grain and hay products of California combined, and there is much more net profit in it, also.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON Horticultural Editor

San Francisco, October 18, 1902.

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The Week.

Rain has refreshed the coast region from San Francisco northward, but fortunately stopped short of the valleys where most harm could be done. The showers were light everywhere and the skies quickly cleared to greater brightness, so that nothing was hurt even within the rain area. In the valley away from the fruit districts moisture for fall plowing is being asked for and a general soaking will be acceptable if a clear week or two can be had for closing up the season's harvests.

Wheat has been on the up grade all the week and closes strong. Futures have recovered from last week's drooping and gone forward a little. Offering of shipping wheat is light and the demand good. One mixed cargo of wheat and barley for Liverpool fills the week's record. Loading is proceeding, and some of the ships chartered long ago are filling. One ship starts with a loss of about \$7000 for the shipper, as the charter is that much above rates now ruling. Wheat can hardly advance too much to suit him. Barley and hay are going to Hawaii, and there is a new charter for wheat to Sydney. Barley is firm, though for local use, rather than shipment, this time; offerings are light and prices advanced. There is a very light movement in oats and prices are unchanged, though holders are firm. Little corn is offered, and rates unchanged. Beans are quiet at the last advance. Limas are marked up here but there is only a jobbing trade; most selling is done in the southern coast growing region. Bran continues firm and slightly higher with light supplies. Hay is unchanged and quiet though held steadily: two warehouses full burned on Tuesday night. Beef and mutton are unchanged and prices well maintained. Medium hogs are easier and large fat hogs in special demand, selling close to medium. Fancy butter is firm: it is a close race between medium fresh and cold storage, with the latter winning sometimes. Cheese is firm and in good demand, prices a little higher and stocks light. Eggs are unchanged a few fancy going well, the trade running on cold storage with some California stored rather weak. Poultry is rather slow, but improving, especially for good, large, fat stock. Potatoes are very quiet;

mostly local demand and not brisk. Onions are dragging with the same asking price as last week. Fine apples, grapes and choice Bartlett pears are selling well. Lemons have a little better tone and limes are held higher. Oranges are unchanged. Dried fruits are about the same, except that fine apricots are quotable a little higher. Prunes are moving to fill previous orders. Almonds are moving fairly, but are a little weak. Walnuts are arriving, the market is firm, but prices unchanged. Choice extracted honey is firm. Hops are quoted higher, but are still a cent below growers' views. Wool is very strong, but little here. The Ukiah sales will be held next Tuesday and a good mark is looked for.

Stockton growers propose to do direct trade in potatoes with the southwest, as they think the dealers are not playing fair. Fourteen of the largest producers of potatoes in the Stockton district have organized an association and will send an agent into Texas and New Mexico to make contracts. They have pledged 400,000 bags of potatoes to be handled by their agency, and claim to control nearly all the rest of the crops in that district, making an output of 600,000 bags. They claim they are getting 15 to 25 cents per sack less than they should receive. A number of wealthy Chinese growers are joining in the effort.

California is apparently getting so far along that she can colonize other parts of the world. The report comes from Los Angeles that about fifty southern California families will embark from San Francisco for Australia in a month, there to form a colony and attempt to raise the products peculiar to California, principally fruit. They propose to go to the northern part of Victoria. Nearly all the colonists have been fruit growers and farmers. Several are from San Diego county, seventeen from Orange county and Santa Ana, and seven families are from the Riverside district.

Much interest is manifested in the fact that the ships carrying coiled in their holds the cable which is to extend from this port to Hawaii and thence to the Philippines are fast approaching the coast. It will not be long, then, before all the American possessions are roped in, and the question of what shall be done with them will be answered.

The people are still being electrified by the candidates and their attendant orators, and the campaign is rushing toward its early close. Fortunately, so far it seems to be a campaign of much cleanness and good manners.

We shall probably have the advantage of a more accurate report than ever before on the condition and outlook of California vineyards through the investigation made by Mr. George C. Husmann, son of Prof. George Husmann, the well-known expert. Mr. Husmann has made a thorough visitation of our vine district for the Division of Pomology of the U. S. Department of Agriculture of which he is a staff expert on viticulture, and over part of his journeys he has been accompanied by Mr. Twight, the viticulturist of the State University at Berkeley.

The comforting news comes that the larger part of the Santa Clara prune crop is under cover. In ten days the small remaining balance will be in the warehouse, and it is possible to estimate closely the amount that will be exported from the county. Those best qualified place the crop at near 90,000,000 pounds, making it about 20,000,000 pounds short of the record breaker of 1900. The fruit runs small, about the same as in 1900, so that large sizes will bring a half-cent premium. The export demand is very large. It is estimated that the shipments of the next ten days will bring the figures for the season thus far to 1500 cars billed for export alone.

Help is still scarce at San Jose. The local papers contain many advertisements for labor. The other day eleven firms were advertising for help. Six of the firms specify the number of help wanted, ranging from 25 to 200 each, and aggregating 575. It is believed the help required by all would bring the total number of girls and women for whom there are positions now open in the fruit factories of San Jose to over 1000. Special inducements are offered in the way of long, steady work, free transportation and higher wages than ever before paid for the work.

QUERIES AND REPLIES.

Blemished Bartlett's.

TO THE EDITOR:—We are sending some Bartlett pears which we received from Hemet, Riverside county. We would like to know the cause of their being so rough, and if there is any remedy for it. The fruit grown on summer irrigated trees is much smoother than those not irrigated.—DEALER, Los Angeles.

The specimens indicate some mechanical injury done the fruit at a much earlier period of its growth. There does not appear to be any indication of parasitic disease, nor insect injury, and it is impossible to tell at this late date what was the cause of the wound or abrasion which has now grown over with the brown covering. It is different from the blemish which we recently attributed to scab on pears from Shasta county. It may have been caused by the beating of the branches in the wind, or by hailstones while the fruit is small, for such appearances are known to be caused by such agencies. As there is no particular disease, so there is no remedy to prescribe. It would be well, however, to make out definitely the cause of the injury, and this might be done by watching the fruit for any unusual appearance early in its growth. What you say about fruit grown on summer irrigated trees being much smoother is interesting, but the relation of the treatment of the trees to the injury is not clear. To demonstrate this matter carefully local observation during the progress of development of the fruit is necessary.

Disease of the Tomato.

TO THE EDITOR:—There is a sickness attacking my tomato vines. It seems to begin at the tenderest shoots at the top. They hang limp, turn brown and dry up. It may attack on one or two shoots at the beginning and others follow. It seems to be in my patch around two distinct centers and spreading from them. I have cut out all that seemed ever so little affected, and have torn up some vines where the cutting out has not stopped the disease. I do not as yet know whether the pruning does stop it at all. I have burned up everything diseased so far, would send you a sample leaf, but I burned them all this morning. When the disease first shows itself the leaves show brownish discolorations on the under side which strike through and then the top of the stem becomes limp, curled up, and then dries up and dies. Is this a summer disease only, or one confined to dry weather? Is it likely to continue, or to stop after the rains? Is it due to some soil deficiency?—READER, Dulzura.

The tomato disease of which you speak is of bacterial origin and proceeds from the root, which is attacked by the bacteria in the soil. Your description of the trouble is very accurate. There is no preventive which can be applied to the plant, because the disease enters from the soil through the root. The best thing to do is to uproot and burn any plant which begins to show the wilting. Merely removing wilted parts does not reach the seat of the trouble. If the whole plant is taken out as soon as seen to be affected there is less liability of the distribution of the trouble, because it can be carried from plant to plant by insects which bite the diseased plant and then pass to the healthy one. To escape this disease you should not grow tomatoes year after year on the same soil. By taking new soil you are in less danger of encountering the germs. As to the occurrence of it, it is usually worse at this time of the year, or earlier in the season. Observations are not yet recorded to determine fully the seasonal progress of the disease.

Johnson Grass Again.

TO THE EDITOR:—Will Johnson grass survive flood waters in tule basin, etc.? Also what is its adaptation to hog feed? Will it grow on higher and dryer lands, for instance, the wheat or grain lands of the State, without irrigation?—READER, San Francisco.

We have no definite information as to how Johnson grass endures submergence. Our impression is that the roots will stand it for a considerable period, but can some reader give observation on this point? The roots have some reputation for hog feed, and some growers are quite disposed to think favorably of the plant in spite of the fact that it is sure to invade cultivated lands if it has a chance and is very difficult of eradication. A very interesting statement concerning the feeding value of the plant, including the roots, is to be found in the PACIFIC RURAL PRESS of

Aug. 30, 1902, page 40. We also published on the dates June 14 to July 5, 1902, inclusive, a very full review of the plant in growth, nutritive value, etc. Common experience is that the plant does not succeed well on dry uplands without irrigation. It will not make winter growth because it is susceptible to frost and low temperature generally, and it speedily dies out in hot, dry ground in the summer season.

Pecan and Pyrethrum.

TO THE EDITOR:—Can you tell me whether anyone in California has experimented with the Texas soft-shell pecan nut tree, and, if so, what success they have met with? Where can I obtain information regarding the best methods of raising pyrethrum?—FARMER, Ventura.

Planting of pecans has been agitated for a great many years. Some trees have been set out, but no commercial product has yet been obtained; consequently, it is impossible to describe any degree of success. The tree bears well in some interior situations where there are wide extremes of heat and cold, but does not bear well near the coast where the temperature is too equable. Under such conditions it does not seem to know when to stop growing and the nuts fail to ripen. They have been reported to hang upon the tree and to sprout on the tree in the wet season.

Pyrethrum plants are started from seed and are planted out in the field about as tomato plants are. They grow rapidly and make large, round clumps. The bloom comes the second year, and the flowers are gathered by combing from the stems into boxes. They have then to be dried thoroughly and are ground into powder with a run of stones, like those in the old fashioned flour mill. Although a great many people have dried the crop during the last twenty years, very few have succeeded with it. There is one large tract in Merced county and a mill by the same owners in Stockton. They have suitable arrangements for drying and grinding and can easily supply all that the market demands.

California Chinquapins.

TO THE EDITOR:—I have sent a small box of chinquapins. I have heard it said that there are none growing west of the Rocky mountains. I found these on Cobb mountain, Lake county, at an elevation of 4000 feet. Are they not chinquapins?—RESIDENT, Harbin Springs.

Your letter of September 18th and sample of nuts have been received. The nuts are chinquapins (*Castanea chrysophylla*). This species has been reported from the Coast Ranges in all of our California floras; by Engelman in Botany of California, Vol. II, p. 100 (under *Castanopsis*); by Greene in his Manual of the Botany of Bay Region, p. 304; and by Jepson in his Flora of Middle Western California, p. 145; so that the statement concerning its absence here can hardly be excused. It is very abundant in the coast mountains north of San Francisco bay, a variety of the species grows in the coast mountains south of the bay, and a closely related species—the Sierran chinquapin (*C. sempervirens*)—ranges from Oregon through the Sierras to the mountains of southern California. The Eastern chinquapin, which ranges from Pennsylvania and Indiana south to Florida and Texas is of another species. All belong to the same genus as the common chestnut of the Eastern States.

Perishing Prune Trees.

TO THE EDITOR:—I am sending some samples of prunes and twigs. They are taken from trees growing on a sidehill in adobe soil. The prunes hang on the tree, won't shake off, and are very small. Please inform me through the columns of your paper the cause of this and the remedy.—OBSERVER, Napa.

The trees are perishing from neglect. The twigs show an average growth of 2 inches last year and about the same this, and so little sap in the tree that this year's growth has in some cases died back already. The fruit is about the size of pigeons' eggs and does not shake off because it has dried fast to the twigs. There is also a little black scale present. There is no use in having such trees. They are probably struggling along with no effective cultivation—perhaps with none at all. Unless the trees can be invigorated by cutting back and good plowing this winter, followed by good cultivation next summer, and perhaps irrigated, if the soil is too shallow to hold water enough to carry them to the end of their work in the dry season, they might as well be grubbed out.

An Eastern Grape.

TO THE EDITOR:—I send a specimen of grapes of which I would like your opinion. They grew on a vine that with many others was grafted some years ago to Concord and Catawba. The original vine was Chasselas. We do not know whether this vine has borne grapes before or not, as this is the first time it has attracted our attention. The other vines have borne well for several years. We think these grapes more firm and superior in flavor to either the Catawba or Concord. Might they prove profitable?—A. H. WILSON, Napa county.

The fruit was nearly made into jam in the mail, but enough pulp was secured to get the flavor of an Eastern grape. It is probable that some other variety was included with your Catawba and Concord cuttings. If you can show the fruit to Prof. George Husmann of Napa he can tell you what it amounts to, judged by Eastern standards with which he is familiar. We doubt that it would be worth attention in this State.

Lace Wing Fly and Tent Caterpillar Eggs.

TO THE EDITOR:—I send a specimen. Is it a fungus growth on the leaves, and what is on the twig?—ORCHARDIST, Watsonville.

The peculiar bodies which you call a fungus growth on the leaves which you send consist of the eggs of the lace wing fly, each one suspended upon a very slender hair. Nothing now remains but the shells, the larvæ having escaped some time ago. As you know the larvæ of the lace winged fly are beneficial insects for destruction of aphids, etc. The enlarged place on the twig consists of the eggs of the tent caterpillar (*Clisiocampa*). These caterpillars sometimes occur in sufficient numbers to occasion considerable destruction of the leaves and the egg clusters should be removed during pruning, special watch being kept for them in orchards which are effected with this tent caterpillar.

The Ochrus Pea.

TO THE EDITOR:—I see in your issue of the 4th inst. that you mention that the Algerian pea makes a good winter growth in our valleys. Please tell me where I can get the seed.—A. E. W., Fresno.

The plant to which we referred in the comments cited was the ochrus pea (*Lathyrus ochrus*). It is a native of the Mediterranean region and has been recommended as a good annual forage plant for winter growth. Attempts to grow it as a spring crop in Berkeley have always resulted in failure, but it has made a better winter growth on adobe soil at Berkeley than any other species tried, including the hairy vetch. The plant is not at all woody, but soft and succulent. Seed was introduced by the Government two years or so ago, and was distributed from the Berkeley Experiment Station last year. We do not know that it is yet in the trade.

Gathering Almonds.

TO THE EDITOR:—When is the proper time to pick almonds? In what condition should the hull be in? Why is sulphur used?—BARTON, Napa.

Almonds should be shaken from the trees upon a canvas or other catching arrangement placed on the ground. The hull should be open enough to admit the free falling out of the nut, but in places where the nut is apt to become stained by exposure to moist air one should not wait too long for the hulls to open. There are some sticktights which will shake off or may have to be dislodged with a light pole and hulled with a special machine made for the purpose. Sulphur is used to give the shell the light color which the market demands.

Dry Rot of Apples.

TO THE EDITOR:—Is dry rot of apples peculiar to the locality or the result of leaving the fruit too long on the tree?—GROWER, Napa county.

It seems to be peculiar to certain varieties, some being largely free from it, and becomes worse as the fruit is left late on the trees. The trouble is also much worse in some localities than in others. The cause is not fully understood. It is different from the Eastern bitter rot.

Alfalfa for Hogs.

TO THE EDITOR:—Will good alfalfa pasture alone make hogs fit for market? Having seen but few hogs on alfalfa pasture, I thought perhaps it did not pay, or else did not agree with the hogs. I am a stranger in this State and would thank you very much for reply.—NEWCOMER, Sacramento.

When you look farther through the alfalfa regions

you will see many hogs pasturing on the plant. It is an exceptionally good feed for growing hogs, but needs to be supplemented with some grain to get the best results, even during the growth of the pigs. For finishing, more grain is desirable. Many hogs are finished by feeding after grain-fed steers.

Pruning Loganberries.

TO THE EDITOR:—Should Loganberries be cut back or allowed to run as they grow?—OLD READER, Atlas.

Our experience is in favor of allowing the canes to run out and train on wire or slats, or run along on a ridge of ground, as the result seems to be stronger fruiting laterals than one gets from the several thinner canes which grow out from a shortened cane. We are not sure, however, that this is always true. At this time of the year the wood which fruited the past summer should be cut out and the new canes brought into place for next season's bearing.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 13, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Conditions during the week were very favorable for gathering and drying fruit. Prune drying will be completed in about two weeks; the crop is heavy and quality excellent. Grape harvest continues and heavy shipments are being made. The wineries are in full operation. Late peaches are yielding a good crop. Further reports on the apple crop show that in the mountains or foothill districts the yield is heavy and the quality very good. In the vicinity of Zenia the high winds during September caused considerable loss in apple orchards. Mountain apples are in market at Red Bluff. Citrus fruits are in excellent condition. The hay and grain crops are nearly all stored. Dry seeding of summer-fallow is progressing.

COAST AND BAY SECTIONS.

Warm weather prevailed during the week and conditions were favorable for fruit drying. Light showers and fogs on the northwest coast were beneficial to crops. The bean crop in the vicinity of San Luis Obispo is nearly all harvested and is going to warehouses. Hop baling is progressing. Prune drying will be completed in most sections during the coming week. Grapes are yielding an excellent crop in all sections. Apples are reported below average in most of the orchards of Humboldt county, but are large and of good quality; in Sonoma and Lake counties the yield is nearly average and quality fair. Citrus fruits are in good condition.

SAN JOAQUIN VALLEY.

Generally clear weather prevailed during the week, with warm days and cool nights. These conditions were favorable for raisin making and prune drying. Most of the raisin crop has now been saved and is large and of excellent quality. Large quantities of wine grapes are being shipped to the wineries. Prune drying is progressing nicely and the crop will be large. Some dried fruit is being shipped to Eastern markets. The fig crop has nearly all been harvested and is being shipped to the packing houses. Ranchers are busy plowing and seeding. Green feed is scarce, but dried feed is plentiful, and stock of all kinds are in good condition.

SOUTHERN CALIFORNIA.

The weather during the week was generally warm and clear in the interior, but cool, cloudy and foggy along the coast. Raisin making is progressing, and the yield is better than estimated. Wine making continues; the yield is very large and quality first class. With the exception of late peaches and tomatoes, the canneries have nearly completed the season's work. Walnut harvest is progressing slowly; the nuts are of good quality, but the yield below average. Bean thrashing continues. Dry plowing has commenced in many places.

LOS ANGELES SUMMARY.—The orange crop is light on the old trees, and up to average on new; quality of fruit good. Picking will begin about November 15.

EUREKA SUMMARY.—The present rain is of much benefit to late crops and pastures. Apple picking continues; the fruit is large and of exceptionally good quality.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, October 15, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.24	.65	4.29	3.00	66	44
Red Bluff.....	.04	.04	1.93	1.41	88	52
Sacramento.....	.12	.12	.56	.90	84	50
San Francisco.....	.20	.20	.82	.97	74	52
Fresno.....	.00	T	.59	.63	86	48
Independence.....	.00	.39	.77	.46	80	46
San Luis Obispo.....	.00	T	.38	1.20	84	46
Los Angeles.....	.00	T	.12	.49	74	50
San Diego.....	.00	.90	.06	.32	70	54
Yuma.....	.00	.11	.22	.85	96	54

Agricultural Review.

EL DORADO.

FRUIT SHIPMENTS.—Republican: The fruit shipments from Placerville are greater even now than the total for any previous year, yet the grape crop, winter pears and apples are still awaiting shipment. Dan G. Carr so far this year has shipped eighty-four cars of fruit. This does not include way shipments nor fruit shipped in small lots to California cities. The El Dorado Fruit Association has shipped prunes and pears to the amount of 2997 crates; peaches, 1193 boxes; pears, 4864 boxes. The Association shipped fifteen refrigerator cars, not all full, but they could have done a much larger business had they not been limited. The Association shipped 147 tons of pears to the canneries. Some of the shipments of the Association did not result very well, but most of the shipments were satisfactory to the members. Taking everything into consideration, the members are satisfied with the year's work.

FRESNO.

RAISIN STEALING.—Democrat: Raisin stealing continues merrily and even more openly. The thieves seem to consider themselves immune from interference and it looks very much as if they were about correct in their judgment. So far no attempt has been made to arrest any one, but it has developed that those who are in this thieving business travel between Fresno and Tulare counties, stealing in the one and disposing of their wares in another. At Cobhy's place they found the raisins stacked. Promptly the boxes were emptied into their wagon and as promptly the empty trays were restacked, so that the owner was not made aware of his loss until several days later.

GOOD PRICES FOR ALFALFA HAY.—Republican: Those who have hay to sell are making money hand over fist. Alfalfa hay is being delivered in Sanger at \$10 a ton and seems to be scarce at that.

PROFITS IN GRAPES.—Enterprise: There is a silver lining in the pockets of the vineyardists this year with grapes bringing from \$60 to \$100 an acre on average colony tracts.

A WASTE OF MELONS.—Sanger Herald: During a recent trip to the river bottom, in company with Mr. Henry Hanke, the Herald editor was surprised to find such a large acreage of watermelons going to waste, owing to the fact that there is no market for them at present. There are several hundred acres of the biggest and sweetest melons that a "coon" ever flopped his lips over being fed to hogs and sheep. The sheep greedily devour the vines, leaving the melons exposed to the hot rays of the sun. William Burns has purchased the feed on Henry Hanke's ranch and has turned his sheep into the melon patch, splitting the melons in two with a shovel so that the sheep can eat them more readily. About fifty acres of Woody Ward's melon patch have been rented to Z. A. Beall, who is feeding the melons to his hogs. It is said that the sheep and hogs fatten rapidly on such feed, so that it is not wasted by any means. It is estimated that not less than 100 carloads of melons are scattered over these fields in the river bottom.

GLENN.

SHEEP THAT ARE SHEEP.—Willows Journal: H. Devenpeck has received from Del Dudley of Dixon, the well-known breeder of fine stock, fourteen head of the celebrated Shropshire sheep. These animals were the finest we ever saw, much larger than the ordinary sheep and very hardy and vigorous looking.

HUMBOLDT.

TALL CORN.—Arcata Union: For a country which does not raise much corn, Arcata bottom must come pretty near holding the record for raising tall stalks. In front of the H. Mfg. Co.'s store are on exhibition seven stalks of corn raised on the ranch of A. A. Falor, near Mad river, which measure 12 feet 10 inches in length, with fine broad leaves. The corn is of the Large Yellow Dent variety.

LOS ANGELES.

PRICES FOR ORANGES.—Pasadena Star: Secretary J. F. Jones' hooks show the following prices as paid the members of the Pasadena Orange Growers' Association for fruit delivered at the packing house: Fancy navel, regular, \$1.40; same, off sizes, \$1.31; choice navels, regular, \$1.25; choice do., off, 96c; standard navels, regular, \$1.19; off, 84c; choice seedlings, 55c; off, 40c; standard seedlings, regular, 12c; off, only paid expenses (177 boxes); choice sweets, regular, \$1.26; off, 94c; choice bloods, regular, \$1.41; off, \$1.17; choice St. Michaels, regular, \$1.22; off, \$1.02; choice Valencias, regular, \$2.15; off, \$1.49. The total was 148 carloads or 53,-

000 boxes. The average cost for packing was about 35 cents. The total sum paid to growers was \$55,464.02. The total receipts from all sources were about \$82,000. The following directors hold over: J. H. Woodworth, M. H. Weight, W. T. Clapp, Byron Lisk, E. H. Royce, John E. Jardine, Mel E. Wood.

NAPA.

CATTLE MISSING.—Register: For some time past residents of Wooden valley have missed cattle from their ranges, and, as no excuse could be given for their disappearance, it was naturally supposed that they were stolen. Late developments have proven that this conjecture has some foundation. I. Fitch of Wooden valley is among the losers. Within a few days three steers have disappeared and no trace whatever can be found of them; every indication points to the conclusion that they were stolen. William Gardner, who is also a resident of Wooden valley, reports that he is at a loss to account for twelve head of beef cattle. They were missed a few days ago from his range, and although a diligent search has been made for them in the neighborhood, they have not been located. From adjoining counties also come reports of cattle stealing. Read & Robbins, who are located at Suisun, are on the lookout for twenty-six head of fine steers which have disappeared. Cattle-men living near Bridgeport report the loss of several head, and there are rumors of other depredations near that locality. No clue whatever has been found of the thieves, as they have been very particular to cover their tracks well, and they are undoubtedly, from the manner of their work, experts at the business.

ORANGE.

PLACENTIA ORANGE GROWERS.—Santa Ana Blade: At the annual meeting of the stockholders of the Placentia Orange Growers' Association, held at Fullerton, the following officers were elected: E. F. C. Klokke, president; A. McDermont, vice-president; Arthur Stanley, secretary; Arthur McDermont, superintendent. The new board of directors are E. F. C. Klokke, A. McDermont, A. Pierotti, T. A. Pendleton, Theodore Staley, C. Woodward and H. W. Shultz. This Association expects to handle 125 cars of oranges this season, and the sentiment of the stockholders was strong against allowing any one to withdraw from his contract with the Association, and market his fruit elsewhere, even should the directors consent.

SAN BERNARDINO.

YUCAPIE APPLES.—Redlands Review: The apple crop on the Wilshire ranch in Yucaipa is a big one this year. About twenty different varieties are raised with success at 5500 feet elevation. From the bearing trees on this ranch it is estimated that about eighty tons will be harvested. The apples have a fine flavor and are considered by judges to be equal to any Eastern fruit at this season of the year.

SAN DIEGO.

THE RICE YIELD.—Imperial Press: Last Wednesday a party of prominent citizens of Imperial were busy harvesting the rice crop. The grain was cut with a mower and the old-fashioned method of binding by hand was followed. The sheaves were rather larger than usual and when the piece was finished the ground was thickly strewn with the golden colored bundles. The heads were well filled and the grain was large and heavy. Mr. Oakley says that the yield is as good or better than that of the average field he saw in Texas and Louisiana. The seed from this year's crop will be saved and planted in various sections of the valley early next spring. D. Nicoll will plant a piece on the Experiment farm, J. W. Shenk will plant a few acres on his ranch near Cameron lake, a plot will be planted near the townsite on the Braly tract, and several in the vicinity of Imperial will experiment with a small acreage each. This will thoroughly demonstrate the rice producing power of the valley and determine whether the crop can be profitably raised.

SAN JOAQUIN.

FUMIGATE FRUIT BOXES.—Lodi Sentinel: A fruit grower suggests that the Horticultural Commissioners of this county have empty fruit boxes fumigated upon the return of the boxes from San Francisco and other places where they have been shipped. According to his statement it would cost no more than 25 cents to fumigate a carload of them. He asserts that fruit pests are brought into the county in the boxes.

THE PEACH ALMOND.—Stockton dispatch: A curio in the fruit or nut line has been discovered here. It is a peach with an almond for a pit. It was raised by Mrs. M. T. Root, who lives on West's lane, 2 miles north of Stockton. She planted a lot of almond nuts four years

ago. Trees came up with almond leaves on them. This year one of the trees bore what to all appearances were small peaches, but on breaking open the fruit the pits were found to be perfect hard-shell almonds, in appearance of the shell, size and the taste of the nut. [This is not new. It was named long ago the "peach-almond"—a freakish affair which is constantly cropping out here and there. At least a quarter of a century ago seedlings of it were proposed as good stock for peach trees, but it has never been used to any extent. Mr. Burbank has intentionally produced the peach-almond by crossing the Wager peach with the almond.]

HORSES ATE ARSENIC.—Monday night Dr. Carey was called to Elliott to attend a case of poison by arsenic. Three horses belonging to Mr. Steacy had got into a vineyard where poisoned bran had been put out for grasshoppers, and they partook of the mixture with the result that two died. The doctor stated that he would be able to save the third animal.

SANTA CLARA.

PRUNE CROP.—San Jose Herald: The fruit crop of this county is about picked, cured and in the warehouses. It is estimated that the county prune crop will approximate 80,000,000 pounds. The overwhelming proportion of the crop is of middle size, there being less small prunes than expected. Cars are going out as fast as they can be secured to fill standing orders. The asking price is 2½-cent basis. There is some shading of the quotations for quick sales and prompt delivery. The old crop of prunes is about cleared out, the great bulk going into channels of consumption. Much of the new crop is going to France and Germany.

PEACHES AND APRICOTS.—Peaches have practically passed out of the hands of the growers. Many peaches went to waste because of inferior quality and lack of labor and high price for picking. Those dried found ready sale to the dealers. The price ranged mainly from 3½ to 4½ cents, though occasionally there were slightly higher prices obtained. Apricots were sold mostly at from 4½ to 5½ cents. Early estimates placed the crop as high as 450 carloads, or even more; but owing to the small size and the fact that considerable went to waste, it is said that the output will be only about 300 cars, possibly 325, though some claim it will not be over 275 carloads.

PRIZE CHEESE.—Gilroyans are gratified to learn that the Spreckels cheese factory, located 4 miles east of town, secured second prize for its product exhibited at the State Fair, and Superintendent D. M. Pyle is being congratulated for the success that has rewarded his efforts in turning out a quality receiving such signal recognition. The honor is more notable in view of the fact that the Spreckels cheese scored only 1 point less than that of E. A. Hageman of Pescadero, who has been regarded as the premier cheesemaker of the State. Regarding the contest, the Dairy and Produce Review in a recent issue says: "California has only a few factories that turn out a product deserving the name of cheese, and several of these were represented. E. H. Hageman of Pescadero entered a well-cured cheddar and won first prize. The other exhibitors were the Spreckels Sugar Co. of Gilroy and F. A. Butler of Novato. William E. Bunker of Newman entered a cheese of the usual California variety. The scores are as follows: E. H. Hageman, 94½; Spreckel's Sugar Co., 93½; F. H. Butler, 91½; William E. Bunker, 88½."

SANTA CRUZ.

EARLY SHIPMENTS OF APPLES TO ENGLAND.—Watsonville Pajaronian: The first car of Watsonville Newtowns was sold in England last week at prices ranging from 10 shillings 6 pence to 11 shillings 5 pence—prices which will net back here about \$1.65 per box. This is, we believe, the earliest sale ever made in Europe of a car of Watsonville Newtowns. The stock was strictly four tier, nicely graded and packed.

DESTROY WINDFALL FRUIT.—The practice of picking up windfall apples from under the trees frequently during the fruit season and destroying them is an effective means of preventing the spread of fruit pests. Many of the apples that fall from the trees are infested with fruit parasites which soon forsake the apple and seek a place of refuge, where they hatch out their young.

ONION MAGGOTS.—When Alexander Crow, State Quarantine Guardian of the State Board of Horticulture, was here in August his attention was called to an onion maggot which appeared in Pajaro valley onion fields this season in very large numbers, reducing the crop in several instances fully 50%. He took several of the pests to San Francisco with him, placed them in hatching tubes, and sent samples of the result to Horticultural Commissioner C. H. Rodgers a few days

ago. The specimens he took hatched out minute flies of dark color and with greenish tinted wings. He sent to Mr. Rodgers a male and female of the fly that he might familiarize himself and others with the parents of the destructive onion maggots. Mr. Crow suggests the abandonment of land so infested for at least one season and recommends, as he did at the time he was here, that the onions be sprinkled with strong whale oil soap after they are set out. This will produce an odor that will prevent the flies from depositing their eggs.

SANTA CRUZ.

PAJARO APPLES.—San Jose Mercury: In the window of the Southern Pacific's up town office is displayed a box of some of the choicest apples ever grown in this State. The fruit was shipped from the Pajaro valley as a sample of what is produced in that section, famous as an apple growing center. The box, which is regulation size and 10 inches in depth, contains but forty-five apples, every one of fine quality and splendid size.

SOLANO.

GROUND SQUIRRELS INCREASING.—Dixon Tribune: A prominent farmer of this section says ground squirrels are becoming annoyingly numerous again. A crusade against the pests was successfully carried on a number of years ago and many farmers have until recent years kept up the practice of poisoning them. There is now an almost complete cessation of operations to prevent their increase and our informant is anxious that the farmers renew the poisoning process.

STANISLAUS.

AN ISLAND RANCH SOLD.—Stockton Independent: Eaton & Buckley have sold 252 acres at Black slough, about 8 miles down the river, to H. E. Bluet of Tuolumne county. The price was \$65 an acre. The property was formerly owned by Henry Boege and is considered very rich land, and especially adapted to the growing of asparagus. It is Mr. Bluet's intention to raise all kinds of produce.

A BIG PUMPKIN AND SOME CORN.—News: J. W. Bell has an interesting display in the window of his office. The principal object is a mammoth pumpkin weighing 197 pounds. It is without doubt the largest specimen of the kind ever seen in Modesto. It was raised in the Turlock irrigation district, in sandy soil, and shows the wonderful effect of water. Over the giant "pie filler" are two stalks of corn, one of which has seven fully developed ears on it and the other six. The corn was raised on W. A. Harter's ranch near Ceres, in the Turlock district. Mr. Harter says that the field will run as high as five ears to the stalk.

SUTTER.

GOOD YIELD OF PRUNES.—Independent: J. G. Cannon, Jr., returned from the Rideout ranch Saturday, where he has been for the past month or six weeks looking after the product of a 60-acre prune orchard. He says he handled 443 tons of the dried product during the past month. The entire crop was purchased some time ago by Rosenberg Bros. and the last consignment has arrived at their packing house. The average yield per acre was 7.38 tons of dried prunes.

TULARE.

IMPROVEMENTS.—The Earl Fruit Co. is making extensive improvements in the packing houses at Portersville, Lindsay and Exeter. Two new Rayburn graders are being put into each house. Each grader will furnish a double set of bins, making room for forty packers around each grader. Superintendent Rayburn says that he will ship an average of eight cars per day out of the Lindsay house during the packing season.

VENTURA.

THE BEAN HARVEST.—Free Press: The bean men are patting themselves on the back this faultless harvest weather. All they ask is ten days more of sunshine and every bean in the county will be in the sack. It will be remembered that last year before the threshers could get around the rains came on and many beans were spoiled, which nearly all had to be hand picked at great expense. It is different this year, the rains have not only obligingly held off, but there are several new threshing machines and crews in the fields, making seventeen in all, and these are all humming at such a rate that they are cleaning up at least 2000 acres of beans every twenty-four hours. A prominent grower said to-day that the yield varied in various sections of the county, some parts going high and some low, but that on the whole the bean lands of the county would average up something like thirteen or fourteen sacks to the acre, and that one could safely put the average yield at a dozen sacks. This is very good, because there will be no after expenses or hand picking.

FORESTRY.

Forest Fires.

The reports of recent forest fires in Washington, Oregon, Wyoming and Colorado, in which many lives were lost, will add to the interest in a special study of the subject which has engaged the Bureau of Forestry for several years. The results of this study, in the form of a bulletin entitled "Forest Fires," by Alfred Gaskill, will be published soon by the Bureau of Forestry of the U. S. Department of Agriculture. By impressing the public with some idea of the peril it suffers from forest fires, and the enormous damage they do, the Bureau hopes to induce more effective legislation in suppressing them.

Investigation has shown that, in an average year, sixty human lives are lost in forest fires, \$25,000,000 worth of real property is destroyed, 10,274,089 acres of timber land are burned over, and young forest growth worth, at the lowest estimate, \$75,000,000 is killed. A special canvass of the country by the Department of Agriculture in 1891 discovered 12,000,000 acres of timber land destroyed by fire.

These figures are mere estimates, which fall far short of showing in full the damage done. No account at all is taken of the loss to the country due to the impoverishment of the soil by fire, to the ruin of water courses and the drying-up of springs. Even the amount of timber burned is very imperfectly calculated, and the actual quantity destroyed is far in excess of that accounted for. Forest fires in this country have grown so common that only those are reported that are of such magnitude as to threaten large communities. The lumbering industry in remote sections of the country may be ruined and people forced to flee for their lives without a mention of the disaster beyond the places where it occurred.

THIS YEAR'S FIRES.—The fires that burned this year in Washington and Oregon were uncommon only in the number of lives lost. The burning of logging and mining camps and farm buildings, the loss to the country in the destruction of timber and young tree growth, is of yearly occurrence. Every fall, not only in Washington, Oregon, Colorado and Wyoming, but up and down the Pacific coast and all over the Rocky mountain country, fires burn great holes in the forests and destroy the national wealth. The air of the mountains over hundreds of miles is pungent with the smoke of conflagration, and navigation on Puget sound has often been impeded by smoke. The following comment by Dr. Henry Gannett of the U. S. Geological Survey should convey a fair idea of the damage done in the State of Washington:

"In less than a generation two-fifths of the standing timber has been destroyed in one of the richest timber regions on the continent, and of the destruction more than half has been caused by fire. Assuming that the timber would, if standing, have the value of 75 cents per 1000 feet, not less than \$30,000,000 has gone up in smoke—a dead loss to the people of the State."

OTHER GREAT FIRES.—According to the Bureau's records, the most disastrous forest fires in the history of this country occurred in October, 1871, simultaneous with the burning of Chicago. It extended all across northern Michigan and Wisconsin and into Minnesota. At least 1000 persons were burned to death and 15,000 were made homeless. The property loss has never been calculated. The Hinckley fire of 1894, which destroyed Hinckley and five other Minnesota villages, burned to death 418 persons, destroyed \$750,000 worth of farm and town property, and about 400 square miles of forest. A fire in southeast Michigan in 1881 burned the forest on forty-eight townships, destroyed \$2,000,000 worth of other property, burned to death 125 persons and made homeless 5000. Another Michigan fire, which occurred in 1896, made homeless 2000 persons and destroyed farm and town property worth \$1,250,000. Wisconsin lost by fire in May, 1891, 100 square miles of forest and other property worth \$2,000,000. In 1894, in Wisconsin, thirteen persons lost their lives and 3000 their homes, and \$2,000,000 worth of town and farm property was destroyed in the Phillips fire.

The enumeration of great forest fires could be extended almost indefinitely. One feature, however, is common to them all: They were small fires before they grew uncontrollable, and with little trouble might have been extinguished. For example, the Hinckley fire smoked as a ground fire for weeks and nobody paid it serious attention. But one day the wind rose and fanned the smoldering embers into flame, the flame caught in the dry underbrush, leaped into the trees and became a fire of so terrible a volume that no human power could stay it.

LEGISLATION.—Legislation, even in the East, has done little toward solving the forest-fire problem. Pennsylvania, Minnesota, Massachusetts and New York are possible exceptions. The best forest-fire laws are probably those of Pennsylvania, which makes an annual expenditure of \$15,000 in support of them. State constables serve as fire wardens in their townships and receive extra pay for their services. Minnesota, brought to a sense of responsibility by disasters, of which the Hinckley fire was the most terrible, has established an efficient forest-fire

system. Massachusetts has had good legislation in the matter. The New York forest-fire laws, though generally limited in their effect to State reserves and parks, have brought good results. West of the Rocky mountains little is done toward the suppression of forest fires, except by the forest rangers on Government reserves, who are employed by the Department of the Interior.

The creation of a sentiment toward forest fires is the first step toward their suppression. Legislation is necessary, but it must be accompanied by the co-operation of the people and the officers charged with the enforcement of the law. The fall and the early spring, before vegetation has begun, are the dangerous seasons for forest fires in the most densely wooded parts of the country. At such times special precautions should be taken, and the people should be kept alert by constant reminders of the peril. An excellent idea, as Mr. Gaskill suggests, is to placard trees along roads and trails with notices of the danger and warnings of the penalties to be incurred by those who violate the fire laws.

ENTOMOLOGICAL.

Mr. Clark's Studies of the Peach Moth.

Warren T. Clarke, assistant entomologist of the University of California, who was sent last winter by the request of a number of prominent citizens of Placer county to investigate the peach pest, and which he did with most satisfactory results, has completed his labors and writes to George D. Kellogg of Newcastle that the full bulletin on the subject is now in the hands of the printers and will probably be issued within a month. The Newcastle News says: "That Mr. Clarke's effort is of inestimable value is shown by the fact that whereas last year the loss by the pest was from 15% to 30% in the orchards experimented upon, this year it was about 1% to 1 1/2%. The saving to the orchardists has amounted to thousands of dollars the first season, while the successful entomologist has won fame by his research and has been tendered the position of entomologist for the State of Minnesota."

"While California will lose Mr. Clarke, we shall retain the benefits of his study."

THE CO-OPERATIVE METHOD.—In 1901 several prominent orchardists of Newcastle suggested to the annual Farmers' Institute that the State University be requested to send an entomologist to Newcastle to investigate the peach worm (*Anarsia lineatella*), and offered to pay the scientist's expenses. The idea was a good one, and George D. Kellogg, Dolph Barnicot and J. B. Sisley were appointed a committee to attend to the matter and co-operate with the entomologist. Mr. Clarke was sent here, and these three, with various others, offered him every facility for making his experiments, the Board of Supervisors appropriating county funds for the purpose, outside of what the orchardists individually spent. The experiments were begun the first of the year 1901, and continued until September. In the letter to Mr. Kellogg, Mr. Clarke gives a forecast of the University bulletin:

LIFE HISTORY OF THE PEACH WORM.—Hibernation of the worms began at some date prior to Jan. 2, 1902, not covered in this investigation. These hibernating worms came to the surface during the first half of March, after the spring growth of trees had begun, and acted as bud worms until about April 22, or for from six to seven weeks. The worms then went into the pupa form in the "curls" of the bark of the main limbs and trunks of the trees. They remained in the pupa form for from ten to twelve days. Adult moths began to appear early in May—first noted on May 4. Egg laying was first noted on May 9, the eggs being placed on the bark of the young, green twigs, and quite well out on them. Eggs hatched on the tenth day after being deposited. The total time consumed in this generation, as observed, was 139 days, and to this should be added the time spent by the worms in their winter quarters before this investigation began.

SECOND GENERATION.—The worms of the second generation began to appear about May 19 and acted as twig borers for some twenty days, when they changed their food habits and began to attack the fruit, boring into it usually at the stem end, though occasionally entering from the side. They continued to eat in the fruit until early in July, when pupation began. The place usually chosen for pupation was along the suture line in the stem end of the fruit. The pupa stage in this generation lasted some seven days, and moths began to appear about the middle of July. Egg laying began on the third day after the emergence of the moths, the eggs being placed on the stem end of the fruit on the edge of the depression found there. These eggs hatched on the sixth day. The total time consumed in this generation was from sixty-three to sixty-five days.

THIRD GENERATION.—The worms of the third generation began to appear about July 21 and immediately entered the fruit. This attack on the fruit was similar to the attack of the worms of the previous generation. These worms worked in the fruit for from twenty-eight to thirty days, and then came to

the surface to pupate. Pupation took place in the stem end of the fruit, as in the previous generation, and six days were usually spent in the pupa form. Moths began to appear about the middle of August. Egg laying began in the latter part of August and the eggs were placed on the older bark, just above the new wood crotches. These eggs hatched in about five days, and the young worms coming from them immediately proceeded to bore into the bark of the crotches formed by the new wood with the growth of the previous year and to prepare their winter quarters. This hibernation began about Sept. 1, and we thus find but three generations of the peach worm in the Placer county region, and, considering the conditions to be normal, the worms spend fully six months in winter quarters.

SHEEP AND WOOL.

Hints on Angora Breeding.

By DR. W. C. BAILEY of C. P. Bailey & Co., San Jose.

The season is now at hand when all Angora breeders are studying when, where and what to breed. This is a question that is so important that it should be carefully considered. A slight mistake in one season's breeding will take years of constant attention to correct.

As to the time when the bucks should be put with the does, no definite rule can be given. The varieties of climatic and crop conditions in our different States must make each breeder decide this question for himself. For beginners, one may say that the time of gestation for the Angora goat is 147 days, or about five months, and that, as sheep have about the same period, one can be guided somewhat by the experience of sheep breeders in his immediate vicinity. One must not forget, however, that young kids are more delicate than young lambs, and that for the first few days of their existence they require very careful attention. The does, too, must be considered and if one would have strong, rapidly growing kids he must have plenty of green feed for the mothers.

The breeding of registered stock is something new for most American Angora raisers. To breed an animal so that one will know absolutely the exact sire and dam of the offspring requires constant supervision and plenty of hard work. There is no value in uncertainties in this business. If one wants pedigrees, he wants them definite or not at all.

One good method is to have the does at night come into the corral which adjoins the pen where the bucks are kept. Any does which are in heat will collect along the fence next to the bucks, and these does can be caught and placed with individual bucks. It is sometimes necessary to use a mantled buck in the flock, so that the does will come in heat rapidly.

Most Angora owners, however, will have little use for this method of breeding. They will resort to flock breeding.

CARE OF DOES.—About a month before one contemplates breeding he should wean the last season kids. If he does not wish to breed the kids he should keep them out of the doe flock during service season. The does should be in good condition and well fed.

They should be protected during storms. If one has a limited number of does which he wishes to breed to a particular buck, he may use the method suggested for pedigreed stock, or he may confine the does in pasture with this buck. Usually the bucks should be turned with the does slowly at first, so that the kids will not start too fast in the spring.

If one is breeding say ten bucks, he should put the bucks in the doe flock in relays. The first few days one or two bucks should be turned with the does, and when these are removed three fresh bucks may be let in. In a few days these should be removed and three or four new bucks put in.

During the interim when the bucks are resting they should be carefully fed and kept in the best health possible. It is not necessary to shear the bucks, but if the mohair on the body is long it may be sheared.

By relaying the bucks one preserves the strength of the animal and insures a gradual and continuous dropping of kids.

It is safe to say that one buck will serve from 50 to 100 does in a period of fifty to sixty days, if handled in this manner.

SELECTION OF BUCK.—Too great stress cannot be laid upon the selection of proper breeding sires. Cost should be considered, but cost should be reckoned upon the number of does served and the value of each kid, not for one season, but for the service life of the buck. For example, one buck will get 75 kids in a season, and he is valuable for three seasons. The 225 kids he sires and the value of them is his value.

If one's does are light fleeced, he wants a heavy fleeced buck, and one must not forget that quality is the hardest point to acquire, and if once attained it should be strictly guarded. Choose bucks properly, and if they are bred true and breed true the flock will soon come to them.

CARE OF THE FLOCK AFTER BREEDING.—The bucks should either be kept away from the does until all

the does are past season, or near the close of the season they may be turned with the does and allowed to run in the flock until the next netting season. The does should be well fed and kept as strong as possible. They should not be crowded or roughly handled, and it is usually best to shear them, weather permitting, about six weeks before kidding season. They should not be exposed to cold storms. A chapter might be written upon this subject, but if one uses common sense and remembers that goats need as much care as any domestic animal, he will not go wrong.

RECAPITULATION.—1. Breed your does so that kids will come at the proper time for your locality.

2. Wean the kids before breeding and have your does and bucks in good condition.

3. Select your bucks for points and from true breeding strains.

4. Take care of your flocks and you will succeed in the Angora industry.

THE VINEYARD.

The Neva Munson Grape.

TO THE EDITOR:—I forward a small package of grapes. They are from a hybrid vine, produced by Prof. T. V. Munson and named Neva Munson. It is a Post Oak-Herbemont cross, and has been grown by me for fully ten years. I think it will be interesting to you to see some pure American grapes grown on a vine healthy and vigorous, when all the surrounding Vinifera varieties have died or are much diseased from the unfavorable influences prevailing during these last five years. The grapes should hang a week longer on the vine, but that part of the vineyard is used now for horse pasture—not cultivated this year, except the few Munson vines in question.

WM. PFEFFER.

Cupertino.

The vine is of wonderful vigor—leaves immense and cane thickly set with solid clusters. The health of the vine under unfavorable conditions is notable. As for the fruit, though it is an improvement when judged from the point of view of the wild grape, it would have no attraction for those acquainted either with the popular Eastern grapes or with the Vinifera varieties. As a healthy stock, it might prove of value, but otherwise we cannot see any good in it. If it is this we are to get as "direct producers," it will require much enthusiasm to enjoy them. We thank Mr. Pfeffer for his kindness in sending the sample; and if he is disposed to tell us just what good he finds in it we shall be grateful.

Florin Grape Shipments.

G. Cox of Florin, well known for his careful studies of the local industries, furnishes the following interesting facts to the Bee:

A trip to the fruit sheds has disclosed a condition of affairs anent the grape crops that is a most agreeable surprise. It will be remembered that subsequent to the hot spell of July there was weeping and wailing among the growers. Reports were circulated to the effect that from 75% to 85% of the grapes were burnt. It was said at the time by those who know that the output would not reach sixty cars.

To show how easily we are deceived in this grape output proposition, I beg to say that up to the present writing ninety-seven carloads have been sent out, which is seven cars more than the total shipments for the season of 1901. Furthermore, the manager of the leading shipping firm said to your correspondent that, in his opinion, provided the rain held off, Florin would send out ten more cars this season, making a total of 107 cars as against 90 for last season. The prices so far have been excellent, and the growers are all well pleased. Some cars sold at a low figure during the early part of the season on account of the New York buyers being crowded with cheap stuff from near-by points. The following, taken from the reports, will give a good idea of the prices realized:

Boston car, 972 packages, \$21.25; sold October 1st at \$2 to \$2.45 per crate; average, \$2.20.

New York, \$19.06; per crate, \$1.70 to \$2.45; sold September 30th.

Chicago, \$14.28; Pittsburg, \$15.35; per crate, \$1.15 to \$1.90.

Boston, \$16.01; average, \$1.60 per crate.

Some of the big prices are as follows: J. L. Scholefield, three crates Muscats at \$4.50 per crate; A. Bandy, one crate, \$6.50; James Rutter, ten crates, \$3.50.

W. R. Taylor shipped 220 crates of Tokays in the first car of the season, for which he received a check for \$315.

Shippers claim that the prices realized so far this season discount all former years. There are now in the neighborhood of forty cars on the way East. In conclusion, the foregoing goes to show that reports of crop failures in Sacramento county should always be taken with a liberal allowance of salt.

THE DAIRY.

Creamery Management.

By A. B. EVANS at the State Dairy Convention, Sacramento.

The subject that has been assigned to me is one of many phases and I have been at a loss to know which phase to discuss. The subject of qualifications of a creamery manager has been discussed a great many times and is more appropriate before a convention of butter makers or creamery operators than before a convention of a dairy association. I will therefore discuss it more as to the needs of a closer relation between the dairyman and the creamery operator.

ASSISTING THE PATRONS.—The needs of the present, especially in a new and growing dairy section, is a more frank and honest relation between the creamery manager and his patrons for the reason that his patrons are embarking into a new enterprise and as a rule are not familiar with even the rudiments of dairying. They are not possessed with a power to distinguish between a paying cow and a "boarder." If one dairyman has selected his cows with a view to milk production and length of their milking period, as the first consideration, he is not apt to quibble much with the creameryman about tests, for he has rightly conceived the idea that it is impossible as a rule to get both a large flow of milk for a long period and a high test; while on the other hand if he has selected his cows with a view of having something profitable to dispose of to a butcher in case of incapacity for dairy purposes, then he is always finding fault with his creameryman because of both a small flow of milk and an unsatisfactory test. It is, therefore, incumbent on the creameryman who is operating in a new field to be competent to assist those who are embarking in the dairy business to select cattle that will be profitable to their owner and that will reduce his own troubles to the minimum. He should also have the courage of his convictions to at all times advise against buying cows just because they are cheap, and not look upon the adventure as an experiment, and for fear that it may not be successful he hesitates to induce any one to expend any considerable sum of money for cattle until he has tried the business. Nine times out of ten the man who engages in the dairy business on this basis makes a failure, and he will ascribe the cause of his failure to the prices paid by the creamery or to the test given and not to the incapacity of his cows.

TESTING COWS AND SEPARATORS.—The creamery manager should demand as a fundamental principle of all his dairymen that they weigh each cow's milk regularly at the time of milking and keep a record of the weights, also that all cows be individually tested regularly so that his patrons may know of their own knowledge what his cows are doing for him as well as know how many pounds of his product he is delivering to his creamery. If the dairyman neglect this important part of his business the creameryman should insist on his coming to the creamery regularly and inspect tests being made and offer every encouragement so that all of his patrons will learn to make tests and operate creamery machinery.

A successful and ambitious dairyman will not rest contented until he has acquired the knowledge of testing and operating separators. I know of no better way for a creameryman to avoid annoying misunderstandings than for him to exhibit an earnest and sincere desire to impart to all dairymen, whether his patrons or not, all the knowledge he can pertaining to the operation of a creamery. It is the work of but a moment for men who are familiar with their business to adjust a complaint based on fact, but it is almost attempting an impossibility to eradicate a suspicion from the mind of an ignorant and indifferent patron. While the creameryman has this and much more to do in order to assist the dairyman in accomplishing the best results, he should also endeavor to acquire an expert knowledge of all the details of practical dairying. He should endeavor to become proficient in the care and management of cattle. He should endeavor to qualify himself so as to be able to assist his patrons in the selection of males to head their herd, to advise them as to raising and breeding their heifers and cows, to point out to them the most economical and profitable way to feed to secure the best results. He should visit his patrons as often as possible for the purpose of seeing how they care for their milk before delivering it to his creamery.

SANITATION.—The crying need of the present is a more thorough enforcement of sanitary laws among dairymen. The creamerymen should unite in their effort to prescribe rules for the care of milk and manner of milking. They should insist on their patrons delivering their milk in a sweet condition and in vessels that are thoroughly cleansed. All dairymen demand top prices for their butter fat; but a majority of them deliver a product that if made into butter in the condition it is delivered to the creamery, would not sell for seconds. They will not deliver it otherwise, so long as the creamerymen operate under present conditions. Let the creameryman insist that all his patrons have an honest test and courteous treatment from all employees of the creamery, and let the patron exert an honest desire to deliver a clean and pure product and let both have the degree of

confidence that is necessary for the successful transaction of any business. Then, and not till then, will the creamery manager be able to transact his business in a manner satisfactory to his patrons and with profit to his company.

In this connection I would suggest that the State Dairy Association endeavor to make its existence felt by assisting not only the creamerymen, but also the dairymen of the State in the work of education so that the creameries will be in receipt of cream from up-to-date dairies. This co-operation on the part of the Dairy Association and the dairymen and creamerymen is essential in order to put down all adulterations of food products and thus retard the sale of cheap imitations of inferior articles of food.

The market of the product of the creamery is another phase of this subject that requires the constant vigilance of a manager. If this part of his duties is neglected low prices are sure to follow and a consequent satisfaction on the part of his patrons.

MISLEADING QUOTATIONS.—At the present time the creamerymen are having no end of trouble by reason of the inflated quotations published by most of the daily papers. It is well-known to all dealers and creamerymen that the product of the dairies does not bring the prices quoted, but it is impossible to convince the producers that the quotations are erroneous. The creameries of the San Joaquin valley have been compelled to operate on very low margins of profit because of this injustice on the part of either the papers or irresponsible dealers. In behalf of one of the largest creameries on the coast, I appeal to the dairymen and dealers to assist the creameries in establishing prices on our product that will be equitable to all and reliable for the guidance of the producer and manufacturer. The interests of the producer, creamery operator and dealer are so closely allied one with the other, that what has a tendency to profit one will rebound to the profit of the other. Let values be fixed on such a basis as to enable the dealer to go to a creamery manager and negotiate for the purchase of his product in a frank and honest manner, thus enabling the creamery to, in turn, go to the dairymen in like manner.

A CENTRAL MARKET.—There is invested in the creamery business within a radius of 40 miles of Fresno, \$150,000. This investment produces not less than four tons of butter per day, yet the managers of these several concerns are not recognized in the smallest degree as factors in the making of the prices quoted on their product. How long the creamery managers will remain inactive in this respect is a question, but from the wail that is now emanating from the dairymen on account of the wide difference between the prices paid for butter fat and present daily quotations on butter, it is safe to predict that unless the dealers of San Francisco get together and establish a call-board system of buying and selling where we can all go and openly offer our product for sale and they bid for its purchase, the creamerymen will have to wait to market their goods through one central marketing agency.

Southern California Jersey Breeders.

During the Santa Ana fair, as reported by the Blade, there was a meeting of the directors of the Southern California Jersey Breeders' Association for the purpose of electing a secretary to fill the unexpired term of N. A. Chisholm, who leaves for the north in a few weeks. Among other business transacted was the election of six new members as follows: J. T. Raitt, F. A. Holbrook, Santa Ana; John C. Keefe, George Y. Coutts, Orange; J. W. Chase, Riverside; C. W. Campbell, Buena Park.

AT THE FAIR.—Gold Drops Maud, 115575, A. J. C. C. the Queen of Guy H. Miller's Venadero herd (Riverside), won first prize in the aged registered class. She gave 79.55 pounds of milk testing by Babcock, 4.3753 pounds of butter fat, which would make 5.07 pounds of butter. Gold Drops Maud has a churn test of 16 pounds 6½ ounces in seven days as a three-year-old, and a four-year record of over 28,000 pounds of milk and 2032 pounds of butter, an average yearly yield of 508 pounds of butter.

May's B's Belle, a two-year-old heifer, won the prize in her class. She is owned by Whiting Jersey Stock Farm, San Bernardino, and gave 48.7 pounds of milk testing by Babcock, 2.0706 pounds of butter fat, which would churn 2.40 pounds of butter.

E. E. Moore of Compton captured both first and second in the grade cow class. With Old Pet and Susan, who gave 70.8 and 96.35 pounds of milk testing, 4.36535 and 3.88575 pounds of butter fat, equal to 5.05 and 4.50 pounds of butter respectively. Old Pet is 31-32 Jersey and ran Gold Drops Maud a hard race, losing only by .02 pound of butter during the forty-eight hours which the test lasted.

THE POULTRY YARD.

Seasonable Suggestions.

TO THE EDITOR:—In a month or two incubators will be filled and the extra cares and watchfulness of the egg hatching period will fall to the lot of many a poultryman. Probably the greatest of unsolved

problems connected with incubation is just how much moisture to apply. It is a very satisfactory experience to have a large percentage of eggs hatch. Far from pleasant is it to find that many chicks have made an effort to get into the outer world, but, from some unexplainable cause, have died in the shell. Why? We say it may be because of a dozen or more contingencies and are inclined to think if more moisture—or less—had been applied all would have been well.

What figure does moisture cut in incubation? We are all endeavoring to find out. Here is an object lesson: During the very warm days of August a hen laid fourteen eggs, in straw recently stacked, some 4 feet from the ground. Exposed, in some good measure, to the rays of the summer sun, without a trace of moisture, by day or by night, this biddy was made glad by bringing out twelve strong, sprightly chicks. One egg contained a chick nearly of hatchable age. One was rotten.

Biddy had stolen her nest. How she got her dozen White Leghorn chicks down from the straw stack she alone knows. They were found foraging about the barnyard a day or two after. Six or seven weeks have passed and ten robust chicks survive, the other two having fallen prey to hawks or hogs.

What shall we say about moisture in this successful incubation? What became of the lice that decimate our flocks of little chicks when we take every imaginable pains to raise them in our coops and brooders? It is well worth while to obtain Nature's secrets, but it takes time and patience.

ROUP.—A neighbor comes to me and relates an experience that is not common in poultry yards at this season of the year. His fowls are in the heavy moult, and, having been exposed to drafts, or becoming overheated in a close house at night, were chilled by the early morning air of this fall season.

There was a slight cold at the first—probably unnoticed—then the dreaded roup. Several remedies were used—the hatchet in several instances. In poultry raising, as in all other avocations, an ounce of prevention is worth a pound of cure. An abundant supply of fresh air, the avoidance of all drafts, is one of the secrets of successful poultry raising. We can not too earnestly call attention to the benefits of fresh air for fowls of all ages, providing, always, there are no drafts. In our warm summer weather it is well to encourage the young fowls, especially, to roost in the open air. If they are kept in houses, by all means see that an unlimited supply of fresh air is given them. Preach the gospel of fresh air. Absence of this will prove detrimental to the flock.

FOR MOULTING.—During the trying ordeal of moulting the hens need a liberal supply of healthy food—not overstimulating, but nutritious. Animal food in some shape or other will prove very profitable and should form a part of the daily ration. If one can not procure fresh bones from the butcher, there is always an opportunity to purchase meat meal or blood meal. A good article of blood meal is cheaper than meat meal, though the first cost is more. Blood meal excels in egg producing qualities. A daily allowance of new process oil cake meal is to be commended. By no means omit green food in some form. If nothing better can be procured, cut alfalfa into half inch lengths and steam it. Hens appreciate good treatment and will liberally reward one for all outlay of care and kindness given.

Napa, Oct. 9.

A. WARREN ROBINSON.

FRUIT PRESERVATION.

Fruits in Their Juices Not "Preserved."

United States General Appraiser Byron S. Waite of New York has handed down a decision affecting importations of preserved fruit which may strike California interests somewhere. The decision restates the board's former definition of the term "preserved in any manner" as used in paragraph 262 of the tariff Act of 1897. The importation in question, says the Fruit Trade Journal, is one by an Eastern firm, and is known as raspberry pulp. It consists merely of crushed raspberries—87.18 parts water and 12.82 parts solid matter—according to the report of the chemist. No evidence of the presence of any artificial or outside preservative was found in the official sample.

The goods were classified as fruit juices and assessed at 60 cents per gallon. The importers claim that the goods are dutiable under one of two paragraphs of the 1897 tariff Act, either under paragraph 262, above mentioned, or under paragraph 263. The former paragraph reads in part: "Apples, peaches, pears and other edible fruits, including berries, when dried, desiccated, evaporated or prepared in any manner not especially provided for in this Act, 2 cents per pound." Paragraph 263 provides for the assessment of "comfits, sweetmeats preserved in sugar, molasses, spirits, or in their own juices, not specially provided for in this Act," at 1 cent per pound and 35% ad valorem.

General Appraiser Waite was of the opinion that the commodity, notwithstanding the fact that it had

lost its original form through the crushing process, was nevertheless not properly dutiable as "fruit juices" simply, but was evidently fruit preserved, and preserved in its own juice. In other cases cited fruit butters and pulp made by crushing and straining processes were held to be fruits preserved in their own juices, and "fruit juice" was held to mean simply the sap obtained by expression.

The proper classification, therefore, lay between the two paragraphs above quoted. As far as the first paragraph is concerned, it has been held by the board that the phrase there used, "preserved in any manner," has reference by the doctrine of ejusdem generis to fruits "dried, desiccated, evaporated," and consequently to cases where moisture had been eliminated. As this would bar the commodity under discussion, the general appraiser decided that the second of the two paragraphs (No. 263) was the ruling one, and instructed the collector to reliquidate the entry on the basis of 1 cent per pound and 35% ad valorem, as provided in it.

FRUIT MARKETING.

Mr. Kearney on the Raisin Situation.

Mr. M. Theo. Kearney of Fresno, on his way back to California, was interviewed by a Journal of Commerce reporter in New York on October 7, and a part of the interview, which was telegraphed to California, is as follows:

Much is said about a very abundant crop this year and estimates of 100,000,000 pounds are made. I feel sure these figures are excessive. The largest crop ever produced was 103,000,000 pounds in 1893. Since then many vineyards have been uprooted, practically no new vineyards of raisin vines have been planted that are in bearing, and these existing are, as all growers know, steadily deteriorating.

Aside from this, increased prices are offered for grapes for brandy making, and the capacity to distill grapes has been more than doubled in the past two years. It should be remembered, too, that to make the growers satisfied with the prices named certain interested parties who usually supply information about the crop will not oppose the idea of a very large crop in sight. The market is entirely bare of old raisins, while in 1901 we had a carry-over of 1500 cars, much of which competed with the crop of that year. In 1900 the carry-over was about 800 cars, and in 1899 600 cars. If we assume this year's crop will be 4500 cars of ten tons each—and I think the records will show this to be excessive—and we take off 1000 cars, which should be carried over by the seeders to provide material for seeding a month before the new crop comes in, thus greatly extending the consumption of seeded raisins, we have but 3500 cars to distribute among a population of nearly 80,000,000 of very prosperous people, who certainly are not economizing in their expenditures, and this without any carry-over raisins to compete with.

With practically all the packing houses in the State under absolute control of the Association, leaving the would-be outside grower without the means to pack and market his crop, the Association has, as I have said, a much stronger grip on the crops than it had in 1900. In view of these facts and as the trade is always ready to buy freely at reasonable prices when it feels certain the prices will be maintained, I think the directors showed too much conservatism in not putting the prices at those of 1900. That is a 6½-cent and 7-cent for 2, 3 and 4 crown loose Muscatels of standard brand instead of 5½ cents and 6 cent s. As they were extremely desirous of making the best possible record for themselves, I believe they will very soon see that they can safely advance the price at least half a cent a pound when the trade has aided in some stock.

This is a policy I have advocated and practically with gratifying results.

What the Fresno Dried Fruit Company Proposes.

The Fresno Growers' Dried Fruit Co. held their first annual meeting at the Fresno Chamber of Commerce rooms last Thursday.

John C. Nourse, W. A. Edgerly, F. M. Burnham, J. Allen and F. A. Berryhill were re-elected directors. All of the officers were re-elected as follows: John C. Nourse, president and manager; W. A. Edgerly, vice-president, and F. M. Burnham, secretary.

A contract similar to the one of the California Raisin Growers' Association of 1900 was decided on as a contract for this company for 1903, with slight changes to be made by the directors. The selling of the fruit was left to the directors.

A plan brought before the meeting by the president, to be submitted to the other growers of the State, was endorsed. The outline of the plan, not yet completed as to details, is as follows:

At each receiving point where sufficient growers deliver their fruit, a local organization shall be

formed similar to the Fresno Growers' Dried Fruit Co. Where there are not enough members delivering to the same receiving point, to make separate organization practical, the growers at such receiving point shall join the organization at the next receiving point. Each local organization is to be under its own management as regards financing and the handling, packing, storing and insuring fruit, and all other local matters.

All of these local companies are to be represented by a central organization, established at whatever point may be considered the most advantageous, the managers of which shall be selected by and from delegates from the local companies. The duties of the directors of the central organization shall be attending to all the selling for the local companies, establishing uniform grades, assisting in the organization of new companies and such other matters of a general nature as could be better attended to by a central body than locally. Each local organization is to pay its pro rata toward the expenses of the central company, which shall be limited to a certain per cent of the amount of money received from the sale of fruit.

Among the advantages claimed for this plan were the following:

Light expense of the central body; greater ease of securing a quorum over a large unwieldy body, and greater satisfaction to local organizations by keeping the expenses of handling fruit under their own supervision, and allowing brands on packages to show where grown.

Should a sufficient number of growers join these associations, which seems exceedingly probable in view of the unnecessarily low price of fruit this year, the amount of fruit so controlled by them, and held for living prices, would materially affect all markets where this fruit is usually sold.

The Association proposes through the papers and by mail, to get in touch with other fruit-growing localities and to perfect the general organization as fast as possible this year.

Disappointment in Almond Sale.

TO THE EDITOR:—The members of the Contra Costa Almond Growers' Association are having trouble with the Johnson-Locke Mercantile Co. of San Francisco, who bought the Association's almonds and who also bought the Davisville Association almonds.

Because the associations are not incorporated it has been the custom for each grower to sign a contract with the buyer which compels him to deliver the goods, while the buyer in accordance with terms of sale is requested to give a bond of \$10,000 to guarantee his carrying out his end of the contract should prices go down. At the time of the sale the Johnson-Locke Co. were the successful bidders. The following Saturday was the time appointed to furnish the \$10,000 bond and sign contracts with the growers; the growers were there, but no one to represent the Johnson-Locke Co.

The majority of the growers became disgusted and went home; others waited until nearly night, when the Johnson-Locke Co., through their agent, appeared with a bond, which was objected to, and with a contract, by the terms of which they could not be compelled to pay for the almonds until they were shipped, which might be six months or a year.

With the understanding that the bond should be made good within four days, and also a verbal agreement that the almonds should be paid for when delivered, some of the growers present consented to sign the objectionable contract. Others refused to sign, and to this day the bond has not been furnished, although sixty days have elapsed since the sale of the almonds.

They now deny that they bought the entire crop of the Association, when every dealer in San Francisco and in the State understood they did.

Because the Association was not incorporated it has no standing in law, and since the bond was not furnished the Association cannot maintain an action against the Johnson-Locke Co. JAS. O'HARA.

Oakley.

Feeding and Storing Sugar Beets.

A California grower writes to Orange Judd Farmer that for feeding beets to pigs and storing same, a good and cheap way is to plow out the beets, cut off only the large leaves close to the top and pile the beets in piles 6 feet wide at bottom and 3 to 4 feet high, or until they come to a point. Cover with weeds or straw or corn stalks, so as to keep the sun off, but so that the rain will fall on them and keep fresh. Hogs have been fattened and they made fine meat on nothing but beets.

Beets are not good for cows as a milk producer, as they tend to make a cow lay on fat instead of giving milk. But beet pulp, especially after it is siloed, is a fine milk producer. Topped beets have been kept in the dry from December until May without spoiling. Brush the dirt off of dry beets with a stiff brush and they make fine horse feed; the horses eat with a relish and do well. Always feed the beets whole. Cattle have never been known to choke on them and stock of all kinds seem to prefer them whole.

THE HOME CIRCLE.

The Old Swimming Hole.

We have bathed in the warm, clear waters
where the Indian healed his pain;
We have plunged in glee to the wave-
tossed sea, and have dived in the
salty main;
But memory ever takes us back, with
longing in our soul,
To jump once more, as in days of yore, in
our boyhood's swimming hole!

'T was just below the high trestle, and as
the trains passed near
We waved wild hands from the warm
shore sands and gave them a lusty
cheer.
Happy young rascals were we then, play-
ing a thoughtless role;
For never a care could reach us there at
the dear old swimming hole!

The big boys dived from the trestle, some
ten feet high or more,
While the young ones dropped feet first,
or hopped from the old springboard
on shore;
And oh! the thrill of that moment when
our first high dive was made
From the trestle's height, in the envious
sight of the others who were afraid!

How well we had noted the danger—the
spot where the barbed wire lay;
The grass-strewn place and the jagged
face of the rock where the big crabs
stay;
Over there is the sunken log, and here's
where the blood-sucker lies;
On the other bank where the weeds grow
rank were the snakes and the sting-
ing flies.

But oh, we would love these dangers could
we only meet them to-day!
If we could cheer when the trains passed
near and shout in the boyhood
way!
In spite of the great green ocean, there's a
longing in our soul
To dive once more as in days of yore in
the dear old swimming hole!

—Colorado Springs Gazette.

The Auction at Roker's Gulch.

Roker's Gulch had no benevolent societies or charitable organizations; and as they were mostly young men, in the prime of their strength, they were able to care for the poor; if not, there was the almost invariable partnership of two together, so that if ill-luck befell one, the other looked out for him.

This simple arrangement of society answered very well indeed for most purposes; while the camp, as a whole, felt itself equal to special occasions of any sort that might arise. Anything that needed to be done, could be and should be.

"Old Howe" was an exception at Roker's. He lived and worked alone. He was a quiet man whom nobody knew much about. Not that there was any mystery connected with him; there was not much to know.

He had failed in business a dozen years or so before "back in the States." Then his wife had died. In California any one might find gold, and so he came there to look for some.

His one child, a girl of ten, had put her arms around his neck, and kissed him good-by as he left her, promising to write to her and send her some of the gold. He had written once or twice at first; then he waited till he should find the gold to send her; so he had never written any more. Perhaps because his purpose waited for fulfillment, he thought of her too, as waiting, a child as he had left her, not a grown-up young woman at all. When he spoke of her, it was always as his "little gal."

After he had come to the mountains he had drifted from place to place. If he never found anything of any account he had the chronic expectation that possesses a miner, which is neither hope nor enthusiasm, but a habit that he cannot break away from.

At last he had come to Roker's Gulch. His dug-out cabin, a mile above the camp, was so much made of stones and earth that it seemed a part of the mountain side itself. It was a mile above the camp, and the last cabin at the gulch, except one; that one belonged to Jack and Burnett Scott. These two were coming down

to camp one afternoon, swinging along down the easy grade, with the up-gulch wind in their faces, and the sharp click of their boot-heels now and then on the stones.

Opposite Howe's cabin they glanced at the open door. They had not seen him lately. They noticed him sitting on a stool before the fireplace, which was just opposite the doorway.

They turned to the place. Howe did not move. "Hallo!" said Jack.

"What's the matter?"

Then the figure before them turned slowly. Such a gray, hollow face!

"Mountain—fever," he said, with effort. He had been sick for a week, and had just managed to get up and get a little fire started in an attempt to get something to eat. They brought water, made coffee for him and promised to bring him supplies when they came back.

The camp at Roker's Gulch had one long street, across which the saloons and stores stared at each other and vaunted their rival attractions. There were plank sidewalks and irrigation ditches. The end of the sidewalk in either direction was regarded as the city limit.

"What's your hurry, b'ys?"

The voice came from just within the door of Shag's Club House.

"Oh, hullo, Tom!" said Burney, as they wheeled about to face the speaker.

"Hullo, yourselves. An' where would ye have got to if I hadn't stopped ye?"

The speaker was "Big Tom" O'Harra.

"About down to the corner, I reckon," answered Jack, good naturedly.

"Well, this is a better place than any corner; come in. The b'ys'll begin to collect soon; it's a good place to spend the evening."

"Maybe it's as good as any for what we want," responded Jack, as they stepped in.

The room was large. The bar was extensive and showy along one side of it. Just now, except the bartender, "Big Tom" was the only occupant. He evidently felt the need of society.

"And what do you want?" he continued.

"The last news from Lone Pine."

Lone Pine was the latest mining excitement. All over the State, indeed, men talked of it. The newspapers quoted and reported it. Little rills of men and burros were flowing along the trails toward it; Lone Pine blankets and shovels and frying pans were in the market. Roker's, like all the rest, were stirred up about it.

"You'll get the latest bulletin here before the evening's out. 'It'll be yesterday's an' day before's over ag'in.' 'Gold for the pickin' up.' When we've heard it times enough, we'll believe it, an' we'll all go. The foot of the rainbow's right there now."

"Well, I want something else," said Jack; "and as you know so much, maybe you'll tell me what to do about it."

"I will," said Tom, positively. "Go ahead."

"Old Howe's sick with mountain fever. It's been on him for a week or more now. We found him on the way down. Somebody's got to help him, or he'll just naturally perish there all alone."

Big Tom was an authority at Roker's. He was six feet two, and a man of unhesitating action. His word carried weight. He was an invaluable ally when his sympathies were aroused.

Jack was glad they found him. He felt that as he and Burney were the only ones who knew of Howe's need, it was their move to do something about it. He felt that in some way he must appeal to the camp; but he was not sure what its temper or resources would be, or what was the best way to get at it.

Now Tom had committed himself to the task of telling him what to do, so he would be sure to help do it. "Auld Howe is sick!" repeated Tom. "How sick is he?"

"He'd got up and got a fire," said Jack, "but he hadn't the strength to cook, and just sat before it. We fed

him. Then he got back to his bunk. He's had enough. His mind isn't very straight. He knows you well enough; but he's been thinking much, while he lay there sick, about his little girl and the old times before he came to the mountains that he's pretty near forgot about Roker's altogether. Keeps saying—if he could see his girl once more before he dies. Maybe he'll die, maybe he won't. I think if we could chip in and send him out to 'Frisco before the snow flies he might get along somehow. He ain't fit to be in the mountains any more."

Tom had been gazing intently at one of the gorgeous pictures that Shag had put on his walls, but was thinking of old Howe, sick in his dug-out and heartbroken besides. It was not just what he expected when he told Jack that he would tell him what to do. He was casting about for some uncertainty for the right thing when Jack stopped.

"What has he?"

Jack laughed a little at the idea of old Howe's assets.

"Not a cent, likely. He's got a fry-pan, and a pick and shovel and a pair of mighty poor blankets. That's about all."

"Oh, hold on," said Burney, "he's got a burro."

"Well, so he has," admitted Jack, "a little one."

"It's a whole one, if it is little."

"He can't ride to 'Frisco on it."

They were all silent for a moment, then Tom spoke:

"I'll tell ye as I tould ye I would. Go get his things and his burro, if he's willing and has the sense to know he can't make use of them himself any more. Bring them down here right away. We'll have an auction of them to-night. The b'ys'll chip in that way. Go get the things. I'll fix it with Shag."

Jack and Burney went out.

Shag was no philanthropist, but one of the most sordid of men. It was not in the least to be expected that he would let his room be used for an auction for the sake of helping anybody; neither would persuasion amount to anything with him.

This Tom knew well enough; but he also knew that Shag would appreciate the chance of getting the crowd away from his rival at the the Opera House, on the other side of the street, and of selling them drinks after the auction was done.

So it proved. Then, having arranged that, Tom went about to advertise the affair; and by the time Jack and his partner got back, the camp was looking for him, and the clubhouse began to fill up promptly.

It would have sounded strange if any one had said that Jack Harling was nervous over anything; but he was a little over this. He had just to tell himself to go ahead and make a start. So he stood upon a settee, and called the meeting to order.

"Boys," he began, "we're going to have an auction here this evening. You all know Old Howe; he's down on his luck."

"He never had no luck, anyway," interjected a listener.

"That's right," admitted Jack.

"He ain't no capacity for luck. But this time he's regularly beat. He's got mountain fever; had it bad for a week and nobody knew about it. 'It's broke him all up. All he talks about is wishing he could see his little girl back in the States just once more. He can't help himself, and if we don't help him we might just as well appoint a committee right now to attend to his funeral services. It won't be long, I reckon, before this camp empties itself out onto the Lone Pine trail. We shall be gone, but the snow will come. It will be as white and still as death up the gulch. We ain't going to go and leave him there, and have it to think of afterward. If we can send him out to 'Frisco he'll stand a chance to get along. I've got his tools and his burro here to sell for him. I want you to bid on 'em, not what there worth, but for what it'll be worth to him."

Jack stopped abruptly. He had grown ardent in his speech; now he was not quite sure whether he had said

what he meant or the right thing at all. His audience however seemed interested.

"Go on, Jack, you're all right," called a voice.

"We'll go on with a bid for the shovel," said the auctioneer. "Who'll make it?"

There was a little pause. Then a mean-faced man near the door, said: "Ten cents."

Jack winced at this. To accept a ten-cent bid meant failure at the very start.

The man who made this bid was the proprietor of the Opera House, who had come to promote a failure of the affair, if he could.

Before Jack acknowledged it Tom's voice was heard:

"Speak up louder and don't be keepin' all the fun to yourselves." Tom had heard perfectly—"was it tin dollars I heard? That's a good start."

"Ten dollars," repeated Jack, blandly, with a questioning glance toward the mean-faced man. It was his turn to wince. The boys were laughing sympathetically with Jack. Popularity was worth money to him. He felt that he had made a mistake.

"Yes," he said, shortly.

"Ten; am I bid twelve?" Jack was saying.

"Twelve from the Tuesday Mine, boys," said a voice.

"Twelve—twelve. Some other mine want it at fifteen? Fifteen! Fifteen!"

"Fifteen from the Lost Trail. Fifteen—going at fifteen to the the Lost Trail. Gone!"

"If it hadn't started at ten," thought Jack, "it never would have brought it."

The pick came next, and, with much chaffing and joking, brought six dollars. Some drills and other implements something more.

Then Burney Scott's voice was heard outside the door, with "Hello! Let us in."

The men parted a little, and he stepped forward. He had the end of a rope in his hand. Then he stopped because the end of the rope tightened and held him. Those who could see through the door began to laugh.

"Well, why don't you come in?"

"Where's the rest of us?"

"Oh, yes. Come in—come right along."

"Don't wait."

Burney leaned his weight back on the rope and laughed. Burney's laugh was always one of the infectious kind. He was quite safe to put his weight on the rope, for just over the doorsill four little hoofs were well braced against him, while a small face, with two bright eyes and a pair of enormous ears, set sharp forward, gave not the slightest sign of consent to the proceeding.

"Say, boys, you'll have to help me," said Burney, when he got his breath.

The boys were in an uproar of hilarity. Four of the men seized the reluctant little burro, and, lifting her bodily, carried her in and set her up on the settee beside Jack.

"Now," cried the auctioneer, as soon he could be heard, "some of you that want your packs carried to Lone Pine, here's your chance."

But the boys were in no hurry to proceed to business. They made fun of the burro, which was, indeed, a comical figure—a shaggy little beast, with an immense head, tiny feet and an expression of irreconcilable astonishment. They bantered Jack. They skylarked with each other.

Jack began to get afraid of this interruption. He could do nothing, however, but stood waiting, with his hand on the burro beside him.

"It's a tableau worth having," called somebody. "Yes—Mary and her little lamb," responded another.

There was a general laugh; then Burney caught the cue of the situation, and with his fine voice began to sing:

Mary had a little lamb,
It's fleece was white as snow.
Shouting the battle cry of freedom!

They made a splendid chorus of it, and it sent the affair back into Jack's hands again, as Burney intended.

"What am I bid for the lamb?" he said, as the singing stopped.

"Twenty dollars."

"Now Roker's Gulch, being a long and narrow settlement, arranged its matter-of-course rivalries accordingly. Upper Town and Lower Town were always wrangling over something."

Jack glanced around the room as he repeated the bid. Then, turning toward a corner where several Upper Town men happened to be, he said:

"Twenty dollars from the Lower Town. Who bids from the Upper?"

"Twenty-five," immediately responded an Upper Town man.

So the rivalry began over the burro, and bids and banter and general hilarity were mixed together for Jack to handle as best as he could. Step by step the offers grew, till the burro was quoted at forty dollars.

Jack looked for no more, when the Sweepstake Mine, represented by four men, who meant to start for Lone Pine in a few days—one of whom was Big Tom, himself—bid once more "Fifty dollars."

That took the burro and finished the auction. But before the words "Going—going—gone!" were fairly out of Jack's mouth, Big Tom was heard from again.

"Now, b'ys we'll have a collecshin from them that hasn't bought anything; and we'll send Auld Howe clear back to his little gurl, herself; thin if we've any money left we can drink to her good health with a clare conscience. What's the use of havin' him adrift in 'Frisco? Here's me hat. Pass it about, an' don't be afraid av spoilin' it by loadin' it too heavy."

And when the hat reached Jack it was heavy.

"Now, hand over me burro," said Tom.

There was an instant's pause. Jack heard a gasping sound and felt a tremor run through the little animal at his side. Then, with head outstretched, it began to bray "Ee-haw! Ee-haw! Ee-haw!"

The effect was explosive. The crowd roared and laughed, and stamped and cheered, till it could hear no more; then shook itself free into the street and broke up.

A week later Old Howe, in special charge of the stage driver, started for 'Frisco, and by him was ticketed through, second-class, to St. Louis, with money enough besides to take him the rest of the way.

Over the foothills, the mountains, across sage-covered mesas, out on the great plains, and on, he came at length to the place where he had left his little girl so long ago. And did he find her? Not exactly. But he found a young woman who put her arms round his neck and kissed him, just as his "little gal" would have done, and who had a home of her own, with a place for him in it.

So it was all right.—Wallace E. Mather.

Practical Book Covers.

An easy way has been discovered to prolong the life of paper-bound volumes. With ordinary paste made from flour or starch paste a piece of calico or gingham to the paper covers. The cloth should be in one piece just as the paper covering is. Dry under a weight to prevent curling. The paper covering is usually well glued to the back of the volume, but in use it soon breaks; the cloth prevents this. If the cloth used is in a plain color it may be ornamented with a few stitches or strokes of the brush. This little discovery will give much pleasure, because one need no longer be ashamed of the appearance presented by the cheap edition that one must often buy, if a coveted book is to be read at all. The book can then be passed on to a friend without fearing that the first or last pages may be lost.

"Bees are very intelligent," commented the Great Scientist. "We have reason to believe they can count as high as ten."

"Yes, indeed," added the Common Person, "and I have often heard of the spelling bee."—Baltimore American.

A Mistake.

I looked at the tramp on a bench in the park,

Whose tatters about him were furled, And I said, as I gazed at the hundreds about,

"You are flotsam washed up from the world."

He stared in surprise—perhaps it was scorn,

But he smiled in a pitying way; "We are flotsam, no doubt, from the world," he replied,

"But scarcely 'washed up,' I should say." —William J. Lampton.

Fire Horses.

The fire horses—two for light engines, and three when the machines weigh more than four tons—are trained as finely as the men. They are the pets of the house and of the neighborhood. Some of them learn in a week to run to their places at the signal; others require a month's training. The lessons are simple enough. A raw horse is made to feel the whip as he hears the signal bell. If he is an intelligent animal, the two so soon become synonymous that he starts for his place the instant the bell rings. Many horses seem to know quite as well as the men when the alarm is one that means business. They really seem to count the strokes. A story is told of one horse who when changed from Harlem to a station near headquarters, was wild to run when his old number sounded, and quite indifferent to the new one, which really meant business and to which he responded only under protest. The stories told in the Department about the horses are endless. Some time ago an old gray fire horse that had been attached to an engine was transferred to the hose truck in the same building. The two rooms were connected by an open door. One night there was an alarm. The hose truck men were dismayed to find that their old gray had disappeared. They thought that he must have been stolen. The engine had left for the fire, and disgrace was imminent for the hose company. Suddenly, a horse was heard kicking in the engine stalls, next door, and although it was not the missing gray, it was quickly forced into hose service, and the company got off in a minute late. At the fire there stood the old gray harnessed to the engine. After the excitement was all over the mystery was explained. Upon hearing the familiar alarm the gray had trotted in next door, and, finding a strange horse in his usual place, had pushed him out the way back into his stall. The firemen, in their hurry, had not noticed the substitution, and had harnessed the horses as they stood and left. A good fire horse will last about six years, and will stand heat and excitement when even men are driven back.—From "Fire Fighting To-Day—and To-Morrow," by Philip G. Hubert Jr. in the October Scribner's.

Naming Children.

The decadence of nicknames and diminutives furnishes cheering evidence of a revival of good sense by parents in the naming of children, and the return to popularity of the good, substantial, old-fashioned names gives further occasion for rejoicing. Eddie and Jimmie and Nellie may be endurable, but when their juvenility is carried into middle life, as often happens (for habits of speech are strong), it is belittling to all concerned. How much more reasonable it is for a Katharine to be called by that dignified name than to be Katie for perhaps the rest of her natural life. Wise parents, too, no longer load their children, particularly girls, with genealogical impediments in the way of collections of family names, nor do they longer indulge their romantic fancy as did one mother of my acquaintance who freighted an innocent little daughter with Ivy, Joan, Alberta, St. Clara, to which was added the surname Smith. Life is not a picnic in this world at best, and children should have some consideration at the hands of parents, particularly in the period in which they are unable to defend themselves.

Lack of Tact.

Lack of tact is responsible for more heartaches and clouded days than many of us are willing to admit. As one woman expresses it, "Some people are so obtuse," and thoughtlessly hurt some one of their friends constantly.

A devoted husband, thinking to pleasantly surprise his wife on her return from an extended trip, had the house cleaned, papered and painted during her absence.

"What did you select green for? Why couldn't you have waited for my return before doing it?" was the ungracious remarks the wife made upon her return.

Not a word of praise or thanks for the extra hours and expense spent in improvements for her sake. Perhaps the color was not just what she would have chosen, but the motive should have been appreciated.

Many a wife spends hours in the preparation of certain dainties of which she knows her husband has an especial fondness. He eats them, to be sure, but never a word of praise or thanks does he utter.

In fact, he takes them as a matter of course, and simply ignores her thoughtfulness. A few kind words would have amply repaid the kind little woman and cost him nothing.

A loving, devoted mother, who had spent many weary hours in the making of a new gown with which to surprise her young daughter, heard only the following ungrateful words:

"Why couldn't you have ruffled the skirt instead of tucking it, mamma? You know I am utterly tired of blue and never meant to have another dress of that color."

"Your grounds are beautiful, but your house looks squat."

"Why did you not choose the Colonial style of architecture?" remarked a caller to a lady who had just moved into a fine new home. Why not have admired the grounds and said nothing about the house unless something pleasant could have been said?

Lack of tact on the part of a guest has made many a hostess uncomfortable and spoiled an otherwise pleasant visit.

Why need we hurt our friends with our extreme frankness, which really amounts to rudeness? In order to practice frankness and sincerity we need never say disagreeable, unkind things. While tact is, generally speaking, an inherent quality, it can to a certain extent be cultivated.—New York World.

What They Talked About.

"I was at luncheon the other day," said a North Side woman, "where the hostess was a graduate of Smith College, three of the guests were graduates of Wellesley, two went through Vassar, two had been Bryn Mawr girls and the other ladies present were graduates of Northwestern, the University of Chicago and Wells, respectively."

"Well," one of her hearers said, "it must have been very interesting. How I wish I could have been there. What did you talk about?"

"Let me see. Oh, yes. About how hard it is to keep help."—Chicago Record Herald.

Where the Fun Comes in.

"Oh, yes," said the young housekeeper, "I keep a complete set of household account books, and it's more fun than a little."

"Fun!" ejaculated the neighbor.

"Yes, indeed. I enjoy it so much."

"Enjoy what?"

"Why, watching my husband trying to straighten them out for me, of course. I get him to do it about once a week."—Brooklyn Eagle.

Stranger—Your congregation was rather small to-day.

Minister—Yes; they only promise to come "weather permitting."

Stranger—But it was clear.

Minister—Well, they mean if it rains they'll come. If it is clear they play golf and go fishing.—Chicago News.

DOMESTIC ECONOMY.

Domestic Hints.

SPANISH BEANS.—One and a half cups Spanish beans, one can tomatoes, six large onions, two chili peppers; soak the beans over night. In the morning cover well with boiling water, and boil three hours, or until tender, then add about one-fourth pound of salt pork or bacon and the peppers. To make the Spanish sauce put two tablespoonfuls of fresh lard or one-half cup olive oil in a large fryingpan or saucepan, add the onions and three cloves of garlic sliced rather fine, and fry gently to a light brown. Add two bay leaves, the tomatoes, and salt and black pepper to taste. Simmer this an hour, stirring frequently, then add the Spanish to the beans and boil for three hours together. Salt to taste an hour after putting together and cook on an asbestos mat to keep from burning. Use more peppers if liked very hot.

FISH CROQUETTES—They may be prepared with salmon, trout, sole, or bass. Simply cup up the meat into small $\frac{1}{2}$ of an inch squares; lay them in a vessel and mix in a third of their quantity of cooked mushrooms, and half as many truffles as there are mushrooms, all cut into the same sized pieces; put on the fire to boil a few gills of good, consistent bechamel; mix into it slowly the mushroom liquor and a few spoonfuls of good melted glaze, and when the sauce has become succulent, add the salpicon in the saucepan; heat it without boiling, and spread it over a tin sheet to become hard, leaving it for a few hours in a cool place or on the ice. Divide the preparation into balls $1\frac{1}{2}$ inch in diameter, lay them on a table bestrewn with white breadcrubs, and roll them either in the shape of corks or balls; dip them in beaten eggs and roll them in the breadcrubs; smooth well the surfaces with the blade of knife, then range them on a tin sheet; put them in hot frying fat; cook only a few at a time and let them get a nice color. After the croquettes are finished and well drained from the fat, range them in pyramid form over a folded napkin, and garnish around with fried parsley.

Hints to Housekeepers.

An iodine stain, one of the most stubborn to encounter, can, it is said, be removed by soaking the fabric in sweet milk and occasionally rubbing the spot.

Down from cattails is, some persons claim, excellent for filling cushions, because no insect infests it, and it does not gather mould or dampness.

To give variety to the sandwich plate, thin slices of white or brown bread may be spread respectively with finely chopped preserved ginger and thick, sweet cream, and then be pressed together.

No French manicure uses a steel instrument about the nails. The little orange stick serves both to clean the nails and push back the cuticle, and the clipper is used instead of scissors for cutting the nails.

To make gooseberry jam take three-quarters of a pound of sugar to every pound of fruit. Put the fruit on by itself in a porcelain-lined or granite-ware saucepan, mash and stir well to keep from burning, and boil one hour. Then add the sugar and boil one hour more.

To make polish for hard or stained wood floors take eight ounces of yellow beeswax, two quarts of spirits of turpentine, one quart of Venetian turpentine. Cut the wax in small pieces and pour the spirits over it—it will soon dissolve; then bottle. Apply with a flannel or soft cloth. It keeps the floors in excellent order.

Only a French or German cook fully understands the value of garlic. Used properly, it gives a more delicate flavor than onion. Here is a way to use it with tomatoes: Wash six tomatoes and cut them in two. Lay the pieces, cut side down, in a pan with hot butter, and let them cook slowly a few minutes. Sprinkle them with pepper and salt and two cloves of garlic chopped very fine. Cover the pan closely and cook them until the tomatoes are soft.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Oct. 15, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	69 3/4 @ 70	70 3/4 @ 71 1/4
Thursday.....	70 3/4 @ 69 3/4	71 1/4 @ 70 3/4
Friday.....	69 3/4 @ 70 3/4	70 3/4 @ 71 1/4
Saturday.....	69 3/4 @ 70 3/4	70 3/4 @ 71 1/4
Monday.....	71 1/4 @ 70 3/4	72 3/4 @ 71 3/4
Tuesday.....	71 1/4 @ 70 3/4	72 3/4 @ 71 3/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	32 3/4 @ 33 1/4	33 3/4 @ 33 1/4
Thursday.....	32 3/4 @ 32 3/4	33 3/4 @ 33 1/4
Friday.....	31 3/4 @ 32 3/4	32 3/4 @ 33 1/4
Saturday.....	31 3/4 @ 31 3/4	31 3/4 @ 32 3/4
Monday.....	31 3/4 @ 31 3/4	32 3/4 @ 31 3/4
Tuesday.....	31 3/4 @ 31 3/4	32 3/4 @ 31 3/4

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 20 3/4 @ 19 3/4	\$1 22 1/4 @ 22 1/4
Friday.....	1 20 3/4 @ 20	1 22 1/4 @ —
Saturday.....	1 20 3/4 @ 21	1 22 1/4 @ 23 1/4
Monday.....	1 21 @ 21 1/4	1 23 1/4 @ 24 1/4
Tuesday.....	1 22 @ 22 1/4	1 24 1/4 @ 24 1/4
Wednesday.....	1 22 3/4 @ 22 3/4	1 24 1/4 @ 25

WHEAT.

There have been no radical changes in the tone of the wheat market or in quotable values since date of last review. Offerings of spot wheat in this center were not heavy, and it was the rare exception where holders exerted any special pressure to realize. Shippers did not as a rule display eagerness to operate at full current figures, but there were reports of purchases of desirable lots being made in the interior on export account at relatively better figures than were quotable here. Speculative trading was not brisk, but prices touched higher prices than preceding week, and operators were not shorting the market to any great extent at the higher figures. The ocean freight market continues weak, to the decided benefit for the time being of California wheat. Ships are not quotable on wheat charters at more than 20 shillings for the usual trip to Europe, and no great quantity of tonnage could at the moment be placed at this rate. There is a fleet of disengaged ships now in San Francisco harbor representing a carrying capacity of 70,000 tons, with engaged tonnage here of about same amount. Vessels headed this way could carry 325,000 tons of grain, making the total carrying capacity of the fleet here and to arrive 465,000 tons. A year ago the deep sea tonnage here and on the way aggregated a carrying capacity of 415,000 tons, with less than 25,000 tons in port seeking engagement.

California Milling.....	1 25 @ 1 27 1/4
Cal. No. 1 shipping, alongside.....	1 20 @ 1 24 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 17 1/4 @ 1 20

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	58 9/4 @ 58 9/4 d	64 3/4 d @ 65 5/4
Freight rates.....	36 3/4 @ 37 1/4 s	— @ 20 s
Local market.....	95 @ 97 1/4	1 20 @ 1 22 1/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.19 1/4 @ 1.22 1/4.
May, 1903, delivery, \$1.22 1/4 @ 1.25.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.22 3/4 @ 1.22 3/4; May, 1903, \$1.24 1/4 @ 1.25

FLOUR.

While the general tone of the market is moderately firm, prices are without quotable improvement. In a good many, if not most instances, flour is selling at lower figures than justified by current values for milling wheat. Especially is this the case where transfers of wholesale magnitude are effected. Spot supplies are of fair volume. Local business is rather light. Most of the flour going outward is on contracts.

Superfine, lower grades.....	32 40 @ 2 65
Superfine, good to choice.....	2 75 @ 3 00
Country grades, extras.....	3 40 @ 3 60
Choice and extra choice.....	3 60 @ 3 90
Fancy brands, jobbing.....	3 90 @ 4 00
Oregon, Bakers' extra.....	3 00 @ 3 30
Washington, Bakers' extra.....	3 00 @ 3 50

BARLEY.

Market has been showing less activity than for some time past, due fully as much to limited offerings and to generally firm views of holders as to decreased inquiry from either shippers or operators on local account. About 110,000 tons of barley has been forwarded outward thus far this season, as against not quite 80,000 tons for corresponding period last year, and a little over 60,000 tons shipped for the season up to the middle of October two years ago. Stocks now remaining are too light to permit of anything near so heavy an export movement in the next six months as has been experienced in the past three months. Market closed strong.

Feed, No. 1 to choice.....	1 12 1/4 @ 1 15
Feed, fair to good.....	1 10 @ 1 12 1/4
Brewing, No. 1 to choice new.....	1 15 @ 1 17 1/4
Chevalier, No. 1 to choice.....	1 37 1/4 @ 1 52 1/4
Chevalier, common to fair.....	1 20 @ 1 35

OATS.

The improved prices last quoted have been as a rule quite well maintained, more especially for the better grades. The inquiry is largely for choice to select oats, and particularly are fine seed oats in good request, such bringing in a small way materially higher figures than are warranted as wholesale quotations.

White Oats, fancy feed.....	1 22 1/4 @ 1 27 1/4
White, good to choice.....	1 15 @ 1 20
White, poor to fair.....	1 10 @ 1 12 1/4
Gray, common to choice.....	1 12 1/4 @ 1 22 1/4
Millings.....	1 20 @ 1 30
Surprise, good to choice.....	1 25 @ 1 30
Black Russian.....	1 00 @ 1 25
Red.....	1 02 1/2 @ 1 25

CORN.

Not much offering, nor is any great quantity required to satisfy the demand at existing values. White Corn is too scarce to quote. There is little difference in asking rates for Large or Small Yellow, but stocks are principally of the first-named variety.

Large White, good to choice.....	— @ —
Large Yellow.....	1 45 @ 1 47 1/4
Small Yellow.....	1 47 1/4 @ —

RYE.

Receipts and offerings are at present of very moderate proportions. There is little pressure to realize, and to purchase freely, full current quotations or more would have to be paid.

Good to choice.....	1 05 @ 1 10
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BUCKWHEAT.

Same inactivity previously noted is prevailing. In the absence of any noteworthy trading, values are largely nominal.

Good to choice.....	1 55 @ 1 70
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BEANS.

The market has been more quiet than last noted, the recent sharp advances in values causing a lull in speculative operations and restricting shipping orders, as well as buying by the local trade, to rather narrow bounds. As to the future course of the market, opinions vary, but it is doubtful if any pronounced weakness will be developed, neither is it likely that there will be any further great upward movement in values, as they are now on a tolerably high plane. The Eastern crop is turning out poorly, which fact, in connection with the efforts of some local operators to cover short sales, made the recent flurry here and established the higher figures. The crop in this State is averaging fairly well as to quantity, and more than ordinarily good as to quality.

Pea, fair to good, 100 lbs.....	3 25 @ 3 50
Small White, good to choice.....	3 00 @ 3 25
Lady Washington.....	3 00 @ 3 25
Pinks.....	2 75 @ 2 90
Bayos, good to choice.....	3 00 @ 3 15
Reds.....	2 50 @ 2 75
Red Kidney.....	3 75 @ 4 00
Limas, good to choice.....	4 00 @ 4 25
Black-eye Beans.....	3 75 @ 4 00
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

While there is no great demand for either Green or Niles, values are being tolerably well maintained at the quoted range. As for some time past, stocks and offerings of Green are heavier than of the other variety.

Green Peas, California.....	1 50 @ —
Niles Peas.....	1 75 @ —

WOOL.

That the local market continues quiet is attributable to lack of noteworthy offerings and not to absence of buyers or neglect of offerings. Good to choice wools are meeting with prompt custom at full current rates. Defective qualities are not being especially sought after, but are moving in a moderate way at figures relatively as high, all things considered, as those prevailing for the better grades. The pool sales which are to take place at Ukiah on the 21st inst. will be the leading feature of the market the coming week.

SPRING.

Humboldt and Mendocino.....	16 @ 19
Northern Sacramento Valley, free.....	14 @ 16

Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 10

HOPS.

The local market remains quiet, with little selling pressure manifested, and no disposition on the part of growers to crowd stocks to sale. On the other hand, dealers evince no disposition to take hold at extreme current quotations. A New York report summarizes the situation as follows: "More activity has been reported of late in the interior of this State, and dealers have picked up quite a good many lots in range of 28@30c, paying the outside figure generally for the finest growths. On the Pacific Coast there has not been large trading, and most of the business has been in Oregon, where 21@22c has ruled. In most sections of Washington and California growers have asked more money, which blocked trade. English advances have come quite firm, but buyers have not turned their attention this way to any extent. Estimates of the crop are 300,000 to 325,000 cwt. Late cables from Germany indicate very active buying account of America and England, and a further rise in values; 100 marks is now quoted, which is equal to about 35c here. This makes an advance of 25 marks within the past three weeks, or nearly 7c per lb. The local market has ruled quiet, but there is a fairly firm feeling. Such lots as are selling command about 30@32c for State, while Pacific Coast hops are offering at 26@28c. Yearlings are slow and the remaining lots can be bought a little cheaper than heretofore. Old olds very dull."

California, good to choice new.....	22 @ 26
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HAY AND STRAW.

Arrivals of hay since last review have not been as heavy in the aggregate as for some weeks preceding, but there was enough to accommodate the demand at full current rates. Buyers are not inclined to take hold freely at prices generally asked, nor are sellers disposed to grant any very marked concessions to effect transfers. Straw is offering sparingly and market is firm at the range of values quoted.

Wheat, good to choice.....	10 50 @ 13 50
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 11 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 50
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 50
Straw, 3/4 bale.....	40 @ 55

MILLSTUFFS.

Market for all descriptions of mill feed remains practically as last noted. There are no heavy stocks and not likely to be any special accumulations in the near future. Neither is much required to satisfy the demand at prevailing values.

Bran, 1/2 ton.....	21 00 @ 22 00
Middlings.....	23 00 @ 25 00
Shorts, Oregon.....	21 50 @ 23 00
Barley, Rolled.....	23 00 @ 24 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Alfalfa is offering in Utah at 8 1/2c there, costing 9 1/2c laid down here in carload lots. Some California Alfalfa has been placed from first hands at 8 1/2c, and for better quality 8 3/4c has been bid, the latter lot being pronounced more desirable than Utah seed, according to samples thus far shown. In other seeds there is nothing new to record.

	Per ctt.
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 20 @ 3 50
	Per lb.
Canary.....	4 1/4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/4 @ 4

BAGS AND BAGGING.

The dull season is on in the bag line, leaving values stationary, with asking figures the only basis for quotations. Grain Bag futures will soon begin to receive consideration, and indications are that they will open at a low range of values.

Calcutta Grain Bags, buyer June-July.....	— @ —
Calcutta Grain Bags, spot.....	5 @ 5 1/2
San Francisco Grain Bags, 22x36, spot.....	5 1/4 @ 5 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three sizes.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

The local market for Hides and Pelts is exceedingly quiet at quotably unchanged values, with the strike of the tanners still in force. Tendency on light Hides is to lower figures. Tallow is selling readily at full current rates, being in request for shipment.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @ —	9 1/4 @ —
Medium Steers, 48 to 56 lbs.....	10 @ —	8 1/4 @ —
Light Steers, under 48 lbs.....	8 1/4 @ —	7 1/4 @ —
Heavy Cow Hides, over 50 lbs.....	9 @ —	8 @ —
Light Cow Hides, under 50 lbs.....	8 1/4 @ —	7 1/4 @ —
Stags.....	7 @ —	6 @ —
Wet Salted Kip.....	8 1/4 @ —	7 1/4 @ —
Wet Salted Veal.....	9 1/4 @ —	8 1/4 @ —
Wet Salted Calf.....	10 @ —	9 @ —
Dry Hides.....	16 @ 17	15 @ —
Dry Kip and Veal, 11 to 16 lbs.....	13 @ —	11 @ —
Dry Calf, under 4 lbs.....	18 @ —	16 @ —
Salted Horse Hides, large.....	2 75 @ —	2 50 @ —
Salted Horse Hides, medium.....	2 25 @ —	2 00 @ —
Salted Horse Hides, small.....	1 50 @ —	1 25 @ —
Dry Horse Hides, large.....	1 75 @ —	1 50 @ —
Dry Horse Hides, medium.....	1 50 @ —	1 25 @ —
Dry Horse Hides, small.....	1 25 @ —	1 00 @ —
Dry Colts' Hides.....	50 @ —	40 @ —
Pelts, long wool, 1/2 skin.....	80 @ —	75 @ —
Pelts, medium, 1/2 skin.....	50 @ —	45 @ —
Pelts, short wool, 1/2 skin.....	30 @ —	25 @ —
Pelts, shearling, 1/2 skin.....	15 @ —	10 @ —
Deer Skins, best summer.....	35 @ —	30 @ —
Deer Skins, good medium.....	— @ —	20 @ —
Deer Skins, thin winter.....	— @ —	20 @ —
Elk Hides.....	10 @ —	12 @ —
Tallow, good quality.....	5 1/4 @ —	5 @ —
Tallow, No. 2.....	4 1/4 @ —	4 @ —
Goat Skins, perfect.....	30 @ —	37 1/2 @ —
Goat Skins, small.....	10 @ —	20 @ —
Kid Skins.....	5 @ —	10 @ —

HONEY.

There are no heavy offerings of any description, either at this center or at producing points. Comb honey is in better spot supply, however, than Extracted. Stocks of latter have been greatly reduced by recent shipments outward. Current values are being well maintained.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/4
Extracted, Amber.....	5 @ 5 1/4
White Comb, 1 lb frames.....	12 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/4

BEESWAX.

Market continues favorable to the selling interest, under light offerings, with demand fair, mainly for shipment.

Good to choice, light, 1/2 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Beef is commanding fully as good figures as current for some weeks past and is in very fair request. Market for Mutton is showing steadiness, there being no noteworthy excess of offerings. Lamb is bringing tolerably good figures, considering that offerings are mostly seven to eight months old. Veal is arriving in rather liberal quantity, especially small sizes, and for latter sort the market inclines against sellers. Grain fed Hogs are in fair supply, but there is a good demand from packers and current values are being tolerably well maintained.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/4
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 1/2 lb.....	7 1/4 @ 9
Veal, large, 1/2 lb.....	7 @ 8 1/4
Lamb, spring, 1/2 lb.....	9 @ 9 1/4

POULTRY.

Market for most kinds of poultry has shown no great firmness since last review. Poor stock was heavily in evidence and was not readily placed, even at low figures. On the other hand, chickens of extra size and in fine condition were salable above quotations. Choice Young Turkeys received more attention most of the week than any other fowl and in a limited way brought comparatively good figures.

Turkeys, alive, choice young.....	18 @ 19
Turkeys, alive, Hens, 1/2 lb.....	16 @ 17
Turkeys, alive, Gobblers, 1/2 lb.....	16 @ 17
Hens, California, 1/2 dozen.....	4 50 @ 6 00
Roosters, old.....	4 50 @ 6 00
Roosters, young (full-grown).....	4 50 @ 5 50
Fryers.....	4 00 @ 4 50
Broilers, large.....	3 50 @ 4 00
Broilers, small to medium.....	3 00 @ 3 50
Ducks, old, 1/2 dozen.....	2 50 @ 4 00
Ducks, young, 1/2 dozen.....	3 00 @ 3 50
Geese, 1/2 pair.....	1 50 @ 1 75
Goslings, 1/2 pair.....	1 50 @ 1 75
Pigeons, old, 1/2 dozen.....	1 25 @ 1 50
Pigeons, young.....	1 75 @ 2 00

BUTTER.

This week's showers are talked of as imparting softness to the butter market. This is the cry every season when rains begin, although wholly unwarranted, as the early rains often do more harm than good to the butter making interest, by destroying dry feed and for the time being giving nothing in its place. The market is quiet, but beyond a matter of sentiment the easy tone is not attributable to weather conditions.

Creamery, extras, # 20.....	29 @ 30
Creamery, firsts.....	26 @ 28
Dairy, select.....	26 @ 27
Dairy, firsts.....	24 @ 25
Dairy seconds.....	21 @ 23
Firkin, good to choice.....	22 @ 23 1/2
Mixed store.....	18 @ 20
Pickled Roll.....	22 @ 24

CHEESE.

Supplies are of very moderate proportions, and are likely to continue for some weeks to come. Current values are being well maintained. Especially is the market firm for mild-flavored new of high grade.

California, fancy flat, new.....	12 1/2 @ 13
California, good to choice.....	11 1/2 @ 12 1/2
California, "Young Americans".....	12 1/2 @ 13 1/2

EGGS.

The market continues to be lightly stocked with choice to select fresh from near-by points, and eggs of this description are commanding in a small way decidedly stiff figures. Sales are made up to 47c. per dozen, but to command this figure the eggs have to be about perfect in every respect, and the price includes cost of delivery to buyer. Eastern "fresh" eggs, by which term is meant eggs that have not been in cold storage to exceed ninety days, are being offered here by the single case at 26@27c. California cold-storage eggs of high grade are being offered in 50 and 100 case lots at 24@25c.

California, select, large, white and fresh.....	46 @ 47 1/2
California, select, irregular color & size.....	37 1/2 @ 45
California, good to choice store.....	27 1/2 @ 32 1/2

VEGETABLES.

The market is lightly stocked at present with most kinds, especially with desirable summer varieties, and prices for latter sort inclined mainly in favor of the seller, although in quotable values there were no radical changes established. Onions were in quite fair supply, and with demand for same principally on local account, prices kept at much the same low range as last noted.

Beans, Lima, # 10.....	3 @ 3 1/2
Beans, String, # 10.....	2 @ 3 1/2
Cabbage, choice garden, # 100 lbs.....	50 @ 60
Cucumbers, # large box.....	65 @ 90
Egg Plant, # large box.....	65 @ 90
Garlic, # 10.....	2 @ 2 1/2
Onions, Yellow Danver, # cental.....	40 @ 55
Okra, Green, # box.....	40 @ 60
Peas, Sweet garden, # 10.....	3 1/2 @ 5
Peppers, Green Chile, # box.....	50 @ 75
Peppers, Bell, # box.....	50 @ 75
Summer Squash, Bay, # large box.....	75 @ 100
Tomatoes, # large box.....	40 @ 60

POTATOES.

There has been little outward movement in potatoes the past week, and with local demand not particularly active, the market most of the time has presented a very quiet air. In a small way, moderately good figures were realized for best qualities of Burbanks. Reds were not offered in heavy quantity, but were wanted only for shipment. Sweet potatoes were in quite liberal stock, as compared with demand, and prices for same were at a rather low range.

Burbanks, Salinas, # cental.....	90 @ 1 20
River Burbanks, good to select, # cental.....	35 @ 60
River Reds.....	65 @ 90
Sweet Potatoes, # cental.....	1 20 @ 1 25

The Fruit Market.

FRESH FRUITS.

The Apple market remains firm for high grade stock and is slow and weak for defective qualities, with plenty of the latter sort offering and not many choice to select. Fine Watsonville Bellefleurs are in very fair request, and are commanding in a small jobbing way up to \$1.25 per box. A carload of select Spitzenberg and Baldwin Apples arrived from Oregon. They were held at \$1.60@1.65 per box for the former and \$1.50 for the latter. Bartlett Pears of prime to choice quality brought tolerably stiff prices in a small way, being quotable up to \$1.35 per box, but stocks of same were light, and this variety will soon be wholly out of market. Winter Nelis Pears were in very fair supply, and sold mainly within range of 40@75c. per box, with few sufficiently select to command any appreciable advance over latter figure. Grapes were in reduced receipt, but for the ordinary run of offerings prices were without improvement. Some very select brought above quotable rates. In market for Table Grapes, Seedless were given the decided preference and commanded the highest figures, but they were in such light re-

ceipt as to be hardly quotable in a regular way. For Wine Grapes of prime to choice quality, current values were well maintained. Black Figs of second crop were on market and sold fairly well. Melons were in reduced supply, but inclined against the selling interest, the weather much of the time not being favorable for consumers taking hold freely. In the line of domestic Berries the market presented little of noteworthy interest, arrivals and demand both being light and prices showing no radical change. Cranberries were in quite fair supply, both Eastern and Oregon, and were offering at generally unchanged values.

Apples, fancy, # 4-tier box.....	1 25 @ 1 50
Apples, good to choice, # 50-lb. box.....	75 @ 1 00
Apples, common to fair, # 50-lb. box.....	25 @ 50
Cantaloupes, # crate.....	75 @ 1 25
Cranberries, Cape Cod, # barrel.....	8 50 @ 9 00
Cranberries, Coos Bay, # 60-lb. box.....	2 50 @ 2 75
Raspberries, # chest.....	5 50 @ 7 00
Figs, 1-layer box, 50@75c; 2-layer.....	75 @ 1 25
Grapes, ornichon, # crate.....	65 @ 85
Grapes, Fontainebleu, # crate.....	30 @ 60
Grapes, Isabella, # crate.....	40 @ 65
Grapes, Muscat, # crate.....	40 @ 65
Grapes, Black, # crate.....	30 @ 65
Grapes, Seedless, # crate.....	85 @ 1 15
Grapes, Tokay, # crate.....	40 @ 75
Grapes, Zinfandel, # ton.....	28 00 @ 32 00
Grapes, Mission, # ton.....	23 00 @ 27 00
Nutmeg Melons, # box.....	35 @ 60
Peaches, # box.....	35 @ 60
Pears, Bartlett, # 40-lb. box.....	90 @ 1 35
Pears, other kinds, # box.....	40 @ 75
Plums, choice large, # box or crate.....	75 @ 90
Plums, small, # box.....	35 @ 50
Prunes, # crate.....	35 @ 75
Pomegranates, # small box.....	50 @ 75
Quinces, # box.....	35 @ 60
Strawberries, Longworth, # chest.....	8 00 @ 10 00
Strawberries, Large, # chest.....	3 00 @ 5 00
Watermelons, # doz.....	75 @ 2 00
Whortleberries, # lb.....	4 @ 6

DRIED FRUITS.

In the market for cured and evaporated fruits the general tone shows little change from that previously noted. It is the exception where desirable qualities of any variety are being crowded to sale, or where full current value on choice to select are not being well maintained. The firmness of the market appears to be most pronounced on Apricots of the higher grades, these being now mostly out of first hands, and there are no heavy supplies being carried by dealers. In Peaches there is no very active movement at present, but choice to select are not in heavy stock and are being very steadily held. Apples are quiet, but there are no heavy spot stocks of desirable quality, and purchases of good to choice cannot be effected in noteworthy quantity at less than full current quotations. Pears offering are mostly common to medium, for which the market is rather easy in tone; fancy halves are in very limited supply and salable to advantage, with no prospect of the market being burdened with offerings of this sort any time this season. Fig market is firm for White, especially for choice pressed, which are in more than ordinarily good shipping demand this season, owing to poor foreign crop. Black Figs are not much sought after, and to secure prompt custom have to go at rather low values. Nectarines and Plums are about as last quoted, with present movement slow. Prunes are moving to some extent on previously booked orders, but there is not much immediate business, and only the large sizes are especially inquired for.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	4 1/2 @ 5 1/2
Apricots, Moorpark.....	7 @ 10
Apricots, Royal, good to choice, # lb.....	5 1/2 @ 7
Apricots, Royal, fancy.....	7 @ 7 1/2
Figs, 10-lb. box, 1-lb. cartons.....	65 @ 80
Nectarines, # lb.....	3 1/2 @ 4 1/2
Peaches, unpeeled, choice.....	4 1/2 @ 5 1/2
Peaches, unpeeled, fancy.....	6 @ 6 1/2
Pears, halves, fancy.....	7 @ 8
Pears, halves, choice.....	5 1/2 @ 6
Pears, halves, fair to good.....	3 1/2 @ 4 1/2
Plums, Black, pitted.....	4 1/2 @ 5
Plums, Red and Yellow.....	5 @ 5 1/2
Prunes, Silver, good to fancy.....	3 1/2 @ 6
Prunes, in bags, 4 sizes, 2 1/2 @ 2 3/4; 40-50s, 4 1/2 @ 4 3/4; 50-60s, 3 1/2 @ 3 3/4; 60-70s, 3 @ 3 1/2; 70-80s, 2 1/2 @ 2 3/4; 80-90s, 2 @ 2 1/2; 90-100s, 1 1/2 @ 1 3/4.	

COMMON SUN-DRIED.

Apples, sliced.....	3 1/2 @ —
Apples, quartered.....	3 1/2 @ —
Figs, White, in bulk.....	3 1/2 @ 5
Figs, Black, in sacks, # lb.....	2 1/2 @ 3 1/2
Plums, unpitted, # lb.....	1 1/2 @ 2 1/2

RAISINS.

The movement is not very brisk in loose Muscatels, large Eastern handlers not taking hold as freely as had been anticipated; the excuse they offer for operating lightly is that they deem present asking figures too high to warrant them stocking up heavily against future needs. Fancy clusters are not being offered in great quantity, and difficulty is being experienced in filling orders. Seedless raisins are meeting with very fair sale, and market for these is moderately firm at the quotations.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5c # lb;

Horse Owners! Use GOMBAULT'S Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

No. 3 crown do, 5 1/4c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanias, 5c; Seedless Thompsons, 5 1/4c; No. 2 crown London Lavers, 20-lb boxes, \$1 30 # box; No. 3 crown do, \$1.40; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

Late Valencia Oranges are still on market in sufficient quantity to warrant quoting, but very few are required to satisfy the existing inquiry. The Lemon market is slightly firmer in tone, offerings showing some decrease, but in quotable values no advance has been established. Limes are firmly held, with stocks rather light and in few hands.

Oranges, Late Valencia, # box.....	3 00 @ 4 50
Lemons—California, select, # box.....	2 75 @ 3 00
California, good to choice.....	1 75 @ 2 50
California, common to fair.....	1 00 @ 1 50
Limes, Mexican, # 1000.....	5 50 @ 6 00

NUTS.

There is a fair jobbing trade in Almonds, but not much wholesale movement. For most select qualities the market is moderately firm at the ruling rates, but on the more common grades concessions to buyers are in some instances necessary to effect sales. New crop Walnuts are now due and moderate receipts are expected the coming week. There is a healthy tone to the Walnut market, especially for choice to select soft-shell, quotable values remaining as last noted.

California Almonds, shelled.....	15 @ 20
California Almonds, paper shell, # lb.....	10 1/2 @ 11 1/2
California Almonds, soft shell.....	7 1/2 @ 9
California Almonds, hard shell.....	5 @ 6
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Walnuts, White, soft shell, # lb.....	10 1/2 @ 11 1/2
Walnuts, White, standard, # lb.....	9 1/2 @ 10

WINE.

The market has not developed any noteworthy change since date of last review. Market for dry wines of last year's vintage is quotable nominally at 24@30c. per gallon, with little offering from growers at present at any price, stocks being mostly out of first hands. The Panama steamer sailing on 11th inst. took 93,377 gallons wine, mostly for New York. Two sailing vessels clearing the past week for the Hawaiian Islands, took as part cargo 15,851 gallons and 40 cases. Wine grapes are selling at same range as previously quoted, the prices for dry wine stock running from \$23@35 per ton, as to kind and section, the higher figures being for select white. Prices on grapes for sweet wines range from \$12@22 per ton, the higher figure mainly for select white and lower figure for second crop Muscats and common Tokays.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	113,475	1,833,771
Wheat, centals.....	70,098	1,843,402
Barley, centals.....	180,013	2,777,210
Oats, centals.....	32,021	308,002
Corn, centals.....	375	16,030
Rye, centals.....	1,530	72,879
Beans, sacks.....	64,818	177,756
Potatoes, sacks.....	20,829	351,708
Onions, sacks.....	7,330	87,682
Hay, tons.....	3,406	64,324
Wool, bales.....	2,750	23,954
Hops, bales.....	1,053	5,820

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks.....	60,844	1,270,252
Wheat, centals.....	111,094	1,560,336
Barley, centals.....	173,857	2,121,961
Oats, centals.....	137	10,510
Corn, centals.....	139	11,325
Beans, sacks.....	295	5,297
Hay, bales.....	1,776	46,296
Wool, pounds.....	...	382,555
Hops, pounds.....	7,682	51,254
Honey, cases.....	14	1,222
Potatoes, pack's.....	4,461	23,027

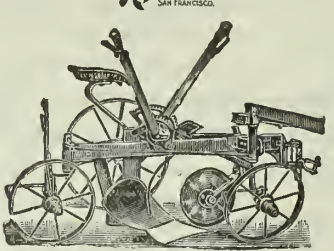
Tearing Down Signals does not delay storms. Opium-laden "medicines" may check coughing, but the cold stays. Do not trifle; when you begin to cough take Allen's Lung Balsam, free from opium, full of healing power.

Eastern Dried Fruit Market.

NEW YORK, Oct. 15. Evaporated apples are arriving in moderate volume and continue firm under a fair demand at full recent prices. Common are quoted at 4 1/2 @ 6c; prime, 6 1/2 @ 8 1/2 c; choice, 7 @ 7 1/2 c; fancy, 8c. Owing to new crop arrivals, spot prunes rule a shade easier, with quotations ranging from 3 1/4 c for 90-100s to 5 1/2 @ 6c for 50-60s. Apricots continued steady to firm at 7 @ 10 1/2 c in boxes and 6 @ 10c in bags. Peaches are steady and unchanged at 12 @ 16c for peeled and 7 @ 10 1/2 c for unpeeled.

- \$2200 buys 65 acres choice sandy land, on railroad, 6 miles from Merced, Cal. Depot on land. Don't wait for your hat if you want a bargain.
- \$1600 buys nicely improved 10-acre ranch with plenty of fruit and free water, only 4 miles from Merced.
- 9-acre ranch, nicely improved, very rich land, only 1 mile from town. Price low for quick sale. Address E. M. MILLS, Merced, Cal.

The most complete sulky plow ever produced.



Extra share, rolling coulters, pole, neck-yoke and three horse runners.

"Canton Clipper Tricycle" Sulky Plow.
14-inch or 16-inch.
HOOKER & CO., SAN FRANCISCO.

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Neither has P. & B. Ready Roofing given cause for complaint when properly laid and properly used. It is a roofing of unusual merit and all builders of good buildings are glad to recommend P. & B. Ready Roofing because they know it is the kind of a roofing that should cover a building.

Comes in rolls, is cheap to transport, convenient to handle, easy to lay and long to last.

Send for booklet.

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"Kentucky" Disc Drill, Steel Frame.
8-foot, 10-foot and 12-foot.
Send for Descriptive Circulars.
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the Index to Lamps and their Chimneys, to
tell you what number to get for your lamp.

MACBETH, Pittsburgh.

ON THE ROAD.

Kings County Fair.

Written for the PACIFIC RURAL PRESS by
F. P. COOK.

The fair at Hanford was a success as
an agricultural fair. All the exhibits
but three were from Kings county. The
three exceptions were the very fine
exhibit from the State experimental
station at Tulare, the exhibit from the
Laguna de Tache grant and one small
live stock show.

The racing was fine.

The receipts of the fair were about
\$3500, against \$3900 last year; but the
evening admission this year was but 25
cents—only one-half that of last year.

The parade of premium live stock
animals included the following, which
will give some idea of the extent and
character of the show in that direc-
tion:

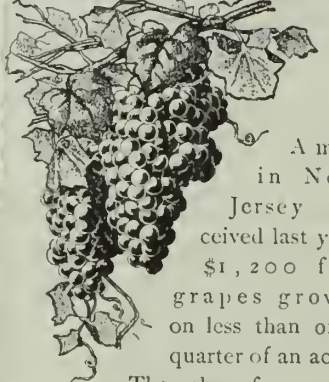
Charles Kimble's Clydesdale stallion;
S. Railsback's English Shire stallion and
family of colts and mares; John Russell's
two mares and two colts; Dr. R. E.
Dixon's yearling roadster stallion Phoe-
bus, by Iris, dam by Junio; K. W.
Jones' band of eleven black Morgan
horses; Charles Downing's Percheron
stallion San Jose Workman, with family;
C. A. Fanny's Percheron Norman stal-
lion; John Russell's two draft mares,
with colts; Thomas Gordon's Norman
stallion Romeo Jr.; Charles Kimble's
two-year-old stallion; Claude Coate's
stallion W. J. Bryan, with family of
eight; L. C. Lens' brood mare and two
colts; W. W. Boyd, Jr.'s draft team to
wagon; M. Bassett's draft team to
wagon; J. W. McCord's two jacks and
one jenny; W. W. Boyd, Jr.'s premium
mule Judy, seventeen months old, fif-

teen hands high, weight 1220 pounds;
also, saddle horse Baldy Sauers, aged
twenty years, which took second pre-
mium; L. C. Lens' brood mare and colt,
and mare and mule; J. M. Daggs' mule
team in harness; S. Larimore's two
Shetland ponies; J. W. McCord's two
Shorthorn Durham bulls, with herd of
cows of same breed; A. F. Nunez's roan
Durham bull; J. W. McCord's herd
Ayreshire cows; J. D. Waugh's Polled
Angus bull; Oscar Railsback's Hol-
stein calves, bull and two heifers; Chas.
Downing's Holstein bull Romeo Blanco;
V. E. Hill's red milk Durham bull,
former winner at State Fair.

The stock was brought around the
track and each group was photo-
graphed by it itself; then all passed out
at the south entrance and to the
stables.

IRRIGATION NOTES.—Alta district (un-
der the Wright law), around Dinuba, in
Tulare county, will remove 17,000 cubic
yards of sand and put a concrete dam
in Kings river to regulate its flow of
water. The new weir in Kings river
for the Peoples' ditch will be completed
about the 20th of this month.

EXETER CITRUS FRUITS.—Lemon pack-
ing was begun ten days or more ago in
a small way. Navel orange packing
will begin about Nov. 1. A number of
cars of Emperor table grapes were
shipped during the past week.



A man
in New
Jersey re-
ceived last year
\$1,200 for
grapes grown
on less than one-
quarter of an acre.
The value of

NITRATE OF SODA

in increasing the quantity and quality
of grapes is explained in a paper by
Prof. PAUL H. WAGNER,
copies of which will be sent free.
ADDRESS
William H. Myers, 12 John St., New York.

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Aged, 4-yr., 3-yr. and 2-yr.-old classes, except 1st on
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awarded won by my herd, except 2nd for 2-yr.-olds,
21 Jerseys and Durhams competing. F. H. Burke
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**9 SHORT-HORNED DURHAM BULLS FOR
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and registered. Fine individuals. At prices to
suit the times, either singly or in carload lots.
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porters and Breeders, for past 21 years, of every
variety of Cattle, Horses, Sheep and Hogs. Cor-
respondence solicited.

JERSEYS—The best A. J. C. C. registered prize herd
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SUTTON BROS., Lodi, Cal. For Sale, 1 Regis-
tered Poland-China Boar and 2 Glts, 5 months old.

SWEETSTAKES herd at State Fair, 1902. Get the
best Poland-Chinas from S. P. Lindgren & Sons,
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HOGS,** Cholet; Thoroughbreds, Wm. Niles &
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P. H. MURPHY, Perkins, Sac. Co., Cal. Breeder of
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ASHLEY BROS., Linden, San Joaquin Co., Cal.,
Breed Poland-China and Berkshire Hogs.

BERKSHIRE AND POLAND-CHINAS, both
sexes. C. A. Stowe, Stockton.

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largest number in our history; and best of all, we were awarded a SPECIAL GOLD MEDAL for ex-
cellence of exhibit, the first one ever awarded to a swine exhibit. We have more first-class animals in
our herd than ever before and the young stock now ready to ship are the specimens. We cull our pigs
closely and will send out only those we think will prove good breeders and be a credit to any herd.
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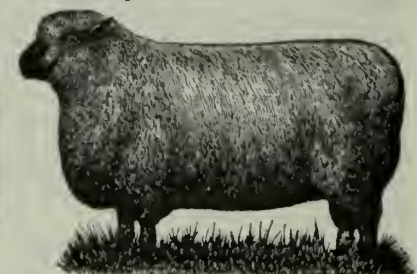
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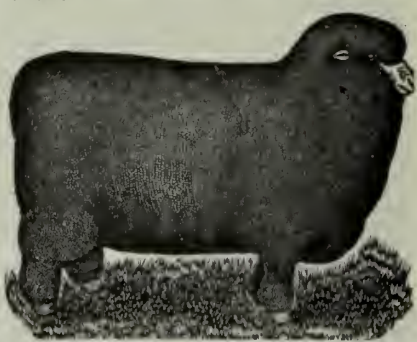
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Gowen, J. T., Jan. 23, 1901.
Dr. B. J. Kendall Co., Dear Sirs:—I can heartily recommend your Spavin Cure. I have a fine colt that was troubled with big head and a few applications of your Spavin Cure cured him. I have also taken splints off from other horses with it. I use it in my family and find it a great cure. I cannot praise it too highly for the good it has done me. I am, Respectfully, MRS. MAGGIE GORE.
It works thousands of cures annually. Endorsements like the above are a guarantee of merit. Price \$1.50 for \$5. As a liniment for family use, it has no equal. Ask your druggist for **KENDALL'S SPAVIN CURE**, also "A Treatise on the Horse," the book free, or address **Dr. B. J. KENDALL CO., ENOSBURG FALLS, VT.**

THE APIARY.

California Bee Inspection Law.

The law of California of 1901 provides that, upon the petition of ten or more resident property holders and possessors of an apiary, or place where bees are kept, to the board of supervisors of any county, stating that certain or all apiaries within the county are infected with the disease known as "foul brood," or any other disease infectious or contagious, and injurious to bees, their eggs, or larvae, that an inspector be appointed by them to supervise the treatment of said bees and apiaries, the said board shall, within twenty days, appoint a suitable person, who shall be a skilled bee keeper, inspector of apiaries. Upon petition of a like number of resident property holders, and possessors of an apiary, the board may remove said inspector for cause after a hearing.

DUTIES OF INSPECTORS.—It shall be the duties of inspectors in each county to cause an inspection to be made when he deems it necessary; and if any foul brood, infectious or contagious disease injurious to bees or their eggs or larvae be found, he shall notify the owner or person in charge of said apiaries, or place where the bees are kept, and he shall require such persons to eradicate and remove such disease or cause of contagion within a certain time to be specified. Notice may be served by an inspector, or by deputy, or after the manner of a summons in a civil action. Any and all apiaries or places where bees are kept, etc., found to be infected with disease are declared to be a nuisance, and upon neglect or refusal of the owner or agent to abate the nuisance within the time specified it shall be the duty of the inspector to abate the same or destroy the infected hives, bees and comb. The expense thereof shall be allowed by the board of supervisors and paid out of the general fund of the county.

SALARY.—The salary of the county inspector of apiaries shall be \$3 a day when actually engaged in the performance of his duties.

The Act of 1883, approved March 30, providing for inspection of apiaries, etc., is repealed.

How to Burn Foul Brood.

The editor of Gleanings insists strongly that it should be "burned at night, when the bees are all in the hive." If done in the daytime there is danger that some of the bees will carry the disease into other hives. He does not advise burning bees, as well as combs, except in very bad cases, or when it is the only case known in the bee yard. A detailed account of the way he treated one case when he could not throw all into a boiler furnace is thus given:

Once, when treating a case of foul

brood—or, rather, burning it up—in an outyard, I started a big blaze in a brush heap near by, but to make the blaze hotter I threw on a quart of coal oil. Then I placed the hive as near the fire as I could, picked out the combs and the bees, and threw them one by one into that raging flame. When the bees flew up (for it was night) they would go right into the fire, of course, and that was the end of them. Then I took the hive, held it up by means of a pitchfork, and thoroughly scorched the walls inside and out. Next, in like manner, I treated the cover; but while the fire was raging I could see the melted wax running down between the fiery embers to the ground. I marked the spot, and when the brush heap burned down I raked the hot coals right over that place, then pawed over the ground with a rake and pitchfork. I made up my mind that I would thoroughly disinfect the ground, and the next morning I found the live coals had been so hot that the clay was turned red—in fact, it was turning into common brick. I had no doubt the whole thing had been disinfected, including the hive.

See that the Druggist gives you the right article—the soothing, helpful Painkiller that was used in your family before you were born. There is but one Painkiller, Perry Davis'. No upright dealer offers substitutes.

GLENN RANCH, Glenn County, :: :: California. FOR SALE In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.



"Canton" Reversible Disc Harrow.
4-foot 20-inch, 5-foot 20-inch, 6-foot 20 inch.
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TUBULAR DAIRY SEPARATOR
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Chicago, Ills. West Chester, Pa.



Patrons of Husbandry.

Notes From the State Grange Meeting.

The reports from the Subordinate Granges of the State showed an increase in membership and a determined effort to protect the farming industry of the State.

The report of committee on woman's work was read by the chairman of the committee, Sister S. P. Sanders of San Jose. It was adopted. It showed what the women had done in the Grange for the past year. It proved that there had been an intelligent and well-directed movement toward improving the condition of women and making more useful their natural powers.

Thomas Johnson of Glen Ellen Grange offered a resolution for the establishment of a State market in San Francisco for the regulation of farm products, the market to be under the control of a State commission, the State to provide wharfage facilities for the reception of all produce sent to it.

Brother S. P. Sanders, chairman of the committee on co-operation, handed in his report, calling attention to the lack of co-operation among the farmers looking toward combining on all enterprises directly affecting their interests.

Brother D. T. Fowler made a report on co-operation and the business done at the last international convention, which he attended in June of this year at Manchester, Eng.

The committee on legislation brought in a report asking for an appropriation of \$10,000 for the St. Louis Exposition, and the report was adopted.

A resolution was adopted asking for an appropriation of \$2000 for each of the outlying experiment stations and \$2000 for each of the forestry stations.

The special committee of taxation reported adversely on the constitutional amendment exempting bonds from taxation, and the report was adopted.

A resolution was adopted to the effect that no community should issue bonds except on a two-thirds petition of the taxpayers, representing two-thirds of the property assessed, and that bonds per cent of the assessed property valuation.

After reciting in a preamble the fact that the Sacramento Valley Development Association had forwarded to the President of the United States two memorials concerning forest preservation and praying that all public timber lands in California may be withdrawn from entry and sale, the State Grange unanimously adopted a resolution addressed to the President of the United States concurring in said memorials and joining in the prayers of the petitioner.

The State Grange decided to meet at San Jose next year.

FOR THE FUTURE.

The Problem Season.

The problem season is close at hand. Though everything in the fruit line has been two or three weeks late this year, yet the season when fruit marketing on the part of producers must close is near at hand. Then will come the intellectual season for the fruit raiser—the season when he has time to consider what things he shall plant, how he shall grow them, and, what is perhaps more important, what arrangements he will endeavor to make for marketing next season. The grain farmer has already reached the season when he has time for the consideration of those things which, while not included in the mechanical problem of the production of grain, are yet included in the larger problem of produc-

ing profits out of his business, a problem in which the production of grain is but one of the elements.

This problem season brings many problems to men's minds, on the correct solution of which much of the gain of their business depends. There is the problem of labor, or help, of where and how to get it and how to treat it; there is the problem of transportation, and how much producers can influence it, how to go to work to do it; there is the problem of marketing California green and dried fruits; there is the problem of whether to organize and just how much organization will be useful in any line, and what are the correct principles of organization which producers can use with security to themselves. In these are involved other problems.

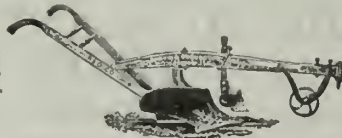
The common sense of men is the greatest leader among men, and it is only by discussion—full and fair and courteous—that the common sense of men in these problems that we have mentioned, as well as others, can be brought out. Common sense is wealth; it is convertible into coin. The printed page affords means of widespread, orderly and effective discussion. For this reason, at this season of the year, and until too late for discussion to have a beneficial effect on arrangements for next year, the PACIFIC RURAL PRESS's columns are open to discussion of all such questions as we have noted, and all others of particular interest to the class of people industrially whom the PACIFIC RURAL PRESS presumes to represent. We shall have something to say on these and other questions from time to time, no doubt, but it is the sense of other men that is most important to them, and the expression of which is invited in these columns. It is high time, we think, that men who are interested in these things began to consider them with a view to expression. We this year saw by the experience of Hon. H. P. Stabler, on the proposition of getting good help from the East, what happens to good men who start in on the best of propositions too late. So, men must be laying their plans in the end of one year for the next if they would succeed in them.

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If you are completely worn out, tired, sick, despondent, nervous and feel that life is a burden, I want you to write to me to-day. I know that I can improve your health and by doing so bring you happiness. I am the manufacturer of Baldwin's Allopathic Tablet Remedies which consist of thirty-five different cures in tablet form. From this list I can select a specific for almost any ailment you may have. I can send a remedy that will cure Neuralgia, Rheumatism, Cold, Headache, Piles, Kidney Trouble, etc. I have one remedy that will cure a multitude of ailments if they arise from a disordered digestion, such as chronic constipation, biliousness, headache, dizziness, etc. This remedy is known as Baldwin's Health Tablets. I want to become acquainted with you and show you that my remedies are just what I represent them to be. If you will send 25c I will send you a bottle of Baldwin's Health Tablets, containing 50 doses, by mail prepaid. If they do not benefit you more than any other remedy you ever used I will refund the price paid. The purchase of one or more of these remedies entitles you to medical advice by our physician free of charge. I will also send you a sample of any of my remedies and a Medical Manual free.

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We have sold nearly all of our First Subdivision. On the fifteenth day of September we shall offer two New Subdivisions—over 10,000 acres of choice land. The prices are low, the terms very easy.

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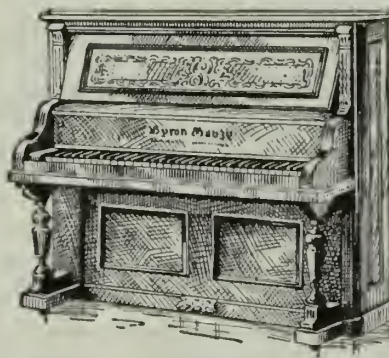


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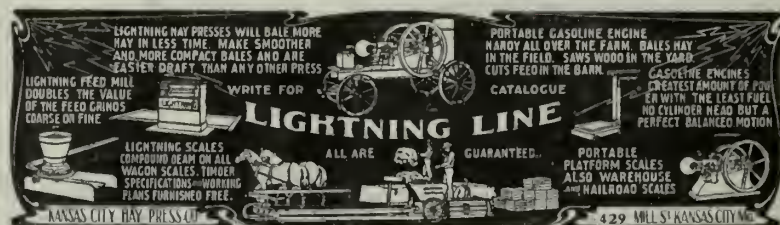
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WILLARD STEEL RANGE into every section of the United States, we will for a short time deliver at your depot free of charge our highest grade Steel range for \$25.00. The regular retail price is \$50.00. It has six 8-inch lids. Top cooking surface is 30x34 inches. Oven 12 inches high, 17 inches wide and 21 1/4 inches deep, and 15-gallon reservoir. Weighs 400 lbs. Burns wood or coal. Write for Free Descriptive Pamphlet. Best Range made. WM. G. WILLARD, Manufacturer, 619 N. Fourth St., St. Louis, Mo., Dept. 8. Will ship C. O. D. with privilege of examination.



Smyrna Raisin Crop.

Special report through the Pacific Commercial Museum of San Francisco for the PACIFIC RURAL PRESS.

Outlook for crop confirms our July report, viz., about 32,000 tons. As far as we can judge from actual arrivals crop runs to larger sizes.

Movement of Crop.—Total arrivals to August 26 were 75,000 quintals, against 40,000 last season.

Sales.—55,000 quintals against 40,000 last year.

Actual prices: Fair average at \$0.12 per oke of 2½ pounds; good average, \$0.1541; good average, \$0.1712; fine average, \$0.1883; finest average, \$0.2140. Opening prices of Sultana raisins were as follows: Good, \$0.2055 per oke of 2½ pounds; fine, \$0.22½; finest, \$0.24. RUFUS W. LANE, Smyrna. U. S. Consul.

Northern California Thanksgiving Citrus Fair.

The Northern California Thanksgiving Citrus Fair, which will be held under the auspices of the California State Board of Trade in the grand nave of the Ferry building, San Francisco, beginning on Monday, November 24, is intended to emphasize some truths which are vitally essential to an intelligent understanding of the true climatic and productive conditions of the northern and central portions of the State.

In face of the purpose and other possibilities it is useless to enlarge on the importance of every county or community in northern and central California that is proud of itself and wants to benefit by making its possibilities better known participating, by a show of its products, in this fair. For the portions of the State to be represented, and incidentally for California as a whole, it will be the best advertising medium, in proportion to cost, that has ever been undertaken.

Is will cost exhibitors nothing at the fair except the expense of installation and maintenance. There will be no charge for space, lights, music, decorating, janitor service, and, in short, there will be no charge by the management for anything. On the contrary, the exhibitor will be assisted in securing his labor and his material for the installation of his exhibit on the best possible terms.

The Southern Pacific, the Santa Fe and California Northwestern Railroads will require that the freight be paid when the goods are shipped, and then, on a certificate from the State Board of Trade that the said goods have been exhibited at the Citrus Fair, the money paid for freight will be refunded and the articles shipped back free if it should be desired to return them. Wells, Fargo & Co. and the Pacific Coast Steamship Co. will carry goods intended for exhibition at one-half their regular rates.

All that counties or communities or individuals are expected to do is to collect their material at home, send it here, install and care for it, and when the fair is over sell it or send it back, as they may prefer.

In collecting fruits and other products it would be a good idea for different communities at the same time to collect statistics regarding the same—that is, the amount produced in the county, the cost of citrus fruit land, the cost of planting and bringing an acre to bearing, the average yield per acre, the prices realized for the fruit, and particularly the date when the fruit ripens. Address all communications to J. A. Filcher, secretary, Ferry building, San Francisco.

STATE OF OHIO, CITY OF TOLEDO, ss.
LUCAS COUNTY,

FRANK J. CHENEY makes oath that he is the senior partner of the firm of F. J. CHENEY & CO., doing business in the City of Toledo, County and State aforesaid, and that said firm will pay the sum of ONE HUNDRED DOLLARS for each and every case of Catarrh that cannot be cured by the use of HALL'S CATARRH CURE.

FRANK J. CHENEY.
Sworn to before me and subscribed in my presence, this 6th day of December, A. D. 1886.

A. W. GLEASON,
Notary Public.

Hall's Catarrh Cure is taken internally and acts directly on the blood and mucous surfaces of the system. Send for testimonials, free.

F. J. CHENEY & CO., Toledo, O.
Sold by Druggists, 75c.
Hall's Family Pills are the best.

Morning Glory, Grapes and Cowpeas.

TO THE EDITOR:—As I have noticed that some of your readers are very anxious to know how to get rid of morning glory, I will give them the benefit of my experience two years ago this fall. I spread stable manure 2 or 3 inches deep over a patch of morning glory and I noticed that the morning glory had a very sickly look the next spring, and last fall I put a heavier coat of manure on, the result being that the manure has burned up the morning glory, as no vegetation will grow on land that is too heavily manured without water. On bottom lands, where there is moisture all summer, I would put on manure thick enough to scald out the morning glory.

Twenty acres of Tokay grapes twelve years old, near Acampo, have produced this year 7000 crates of grapes. These grapes sell here f. o. b. for 75 cents per crate.

I have planted cowpeas two years on upland and find they produce very well without irrigation. I plant them as soon as the frosts are over, and they bear until frost in the fall. They seem to be good feed for poultry, horses, cattle and hogs, besides being good for table use. I use them green. They make a good dish and cook very quickly. I do not know what the yield per acre would be, as I have but a small patch, but I think an acre would produce 1200 or 1500 pounds on Lodi soil without water.

Lodi. R. B. FREEMAN.

Pacific Rural Press Agents.

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Exeter—Fred Page, of the "Sun."
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Porterville—Lumley Bros., of the "Enterprise."

New Patents.

DEWEY, STRONG & Co.'s SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING SEPT. 30, 1902.

710,035.—ROCKING CHAIR.—C. A. Bergstrom, Tacoma, Wash.
710,037.—VALISE.—C. A. Bodwell, Jr., Lakeville, Cal.
710,246.—FIRE HOSE.—J. Buchtel, Portland, Or.
710,253.—BRAKE.—H. W. Cooley, Lost Valley, Or.
710,254.—VEHICLE AXLE.—J. H. Cooper, Madera, Cal.
710,317.—BOILER FEEDER.—C. Cummings, San Francisco, Cal.
710,147.—ROWING APPLIANCE.—N. B. Goodwin, S. F.
710,054.—DRIDGER.—I. B. Hammond, Portland, Or.
710,283.—CAR COUPLING.—W. S. Lennon, Tucson, Ariz.
710,160.—MANIFOLD BOOK.—A. Levison, S. F.
710,334.—EXPLOSIVE ENGINE.—R. C. Marks, San Diego, Cal.
710,330.—CARBURETOR.—R. C. Marks, San Diego, Cal.
710,166.—HAY PRESS.—P. H. McVicar, Livermore, Cal.
710,164.—WRENCH.—M. Murray, Baxter, Cal.
710,334.—BOOM RIGGING.—F. V. Nielsen, S. F.
719,336.—GAS APPARATUS.—H. M. Papst, S. F.
710,077.—PIPE WRENCH.—C. C. Rueger, Butte, Mont.
710,078.—EGG STAND.—J. Salomon, S. F.
710,085.—POTATO SLICER.—L. L. Stevens, Los Angeles, Cal.
709,941.—OIL BURNER.—S. M. Trapp, San Diego, Cal.
710,125.—CURING FOODS.—C. B. Trescott, Portland, Or.
710,307.—BUILDINGS.—G. E. Voekel, Los Angeles, Cal.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

PORTABLE HAY-LOADING DERRICK.—No. 708,189, Sept. 2, 1902. E. Brust, Davisville, Cal. The object of this invention is to provide a compact, rigid, economically constructed device to be used for loading or stacking hay and the like. It is adapted to be moved readily from place to place in the field, requires no side stays or guys to steady it, and when placed in proper position it will pick up a load at any desired point and automatically swing the load to the point of discharge. It consists of a wheeled frame or base, a pillar or mast pivotally supported thereon, trapezoidal supports upon said base and carrying at their upper convergent ends oppositely disposed journal blocks in which the mast is turnable, a vertical truss rod connecting said blocks and the wheeled frame whereby the structure is rigidly united, a jib or arm supported intermediate of its ends upon the mast sheaves on either end of said arm, a fall rope woven through said sheaves, and direction sheaves upon the base frame, around one or the other of which said rope is adapted to pass; and other details of construction.

HARNES ATTACHMENT.—No. 708,876, Sept. 9, 1902. J. T. Surhaugh, Arhuckle, Cal. The object of this invention is particularly to provide a means for securing buckles, rings and the like upon harness or wherever else buckles and rings are used in connection with a leather or like support; and to provide a durable reinforcement for

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the ordinary leather strap and stitching by which huckles and rings are held. The fastening device is carried by the strap and a retainer consisting of a metal plate between the layers of the strap, the plate being of less width than the strap and bent at its center, and the members brought together to lie one on the other in direct contact and concealed from view by stitching the edges of the layers together. A rivet passes through the end of the plate and the strap to secure the parts together.

WOOL WASHING MACHINES.—No. 709,227, Sept. 12, 1902. J. Keefe, San Francisco, Cal. This invention is designed for cleansing wool and consists in the combination with washing tubs or tanks of a series of endless traveling helts in pairs within the washing tub having adjacent faces of the two helts moving in the same direction, and one or both having projecting snurs to insure the travel. Carrying rollers receive the wool at the upper ends of the helts, and it passes thence through squeezing rollers and is again submerged in the second tank, through which it passes in like manner, and so on until it is sufficiently cleansed.

ANIMAL EXTERMINATOR.—No. 709,207, Sept. 16, 1902. L. N. Cornett, Natividad, Cal. This invention is designed to generate smoke or other noxious vapors, and to force such vapors into the holes of burrowing pests, such as gophers, squirrels and the like, the apparatus being portable. The generator chamber has a removably perforated receptacle fitted therein and adapted to contain the combustible materials, an air compressor and connection between the compressor and the generator.

CULTIVATING PLOW.—No. 709,601, Sept. 23, 1902. A. Horner, Paaulo, Territory of Hawaii. This plow is especially designed for working the ground between rows of sugar cane or equivalent vegetable product which is grown in a similar manner. It consists of a pair of angularly mounted revolvable disks adjustable forward and backward with relation to the team and inclining toward each other at the top, a double or shovel plow adjustably located in front of the disks and a sub soil plow in the rear, these parts being all adjustable with relation to each other, so that the ground can be thoroughly cultivated, weeds destroyed and the earth hilled up against the rows to any desired degree.

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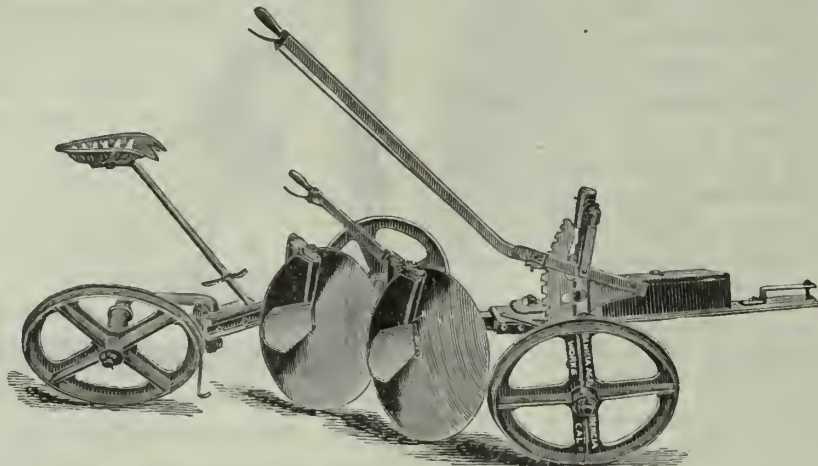
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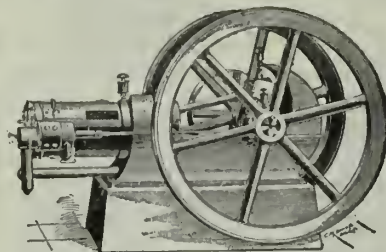
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Vol. LXIV. No. 17.

SAN FRANCISCO, SATURDAY, OCTOBER 25, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.



Alfalfa Stacking on the New Lands of Kings County.

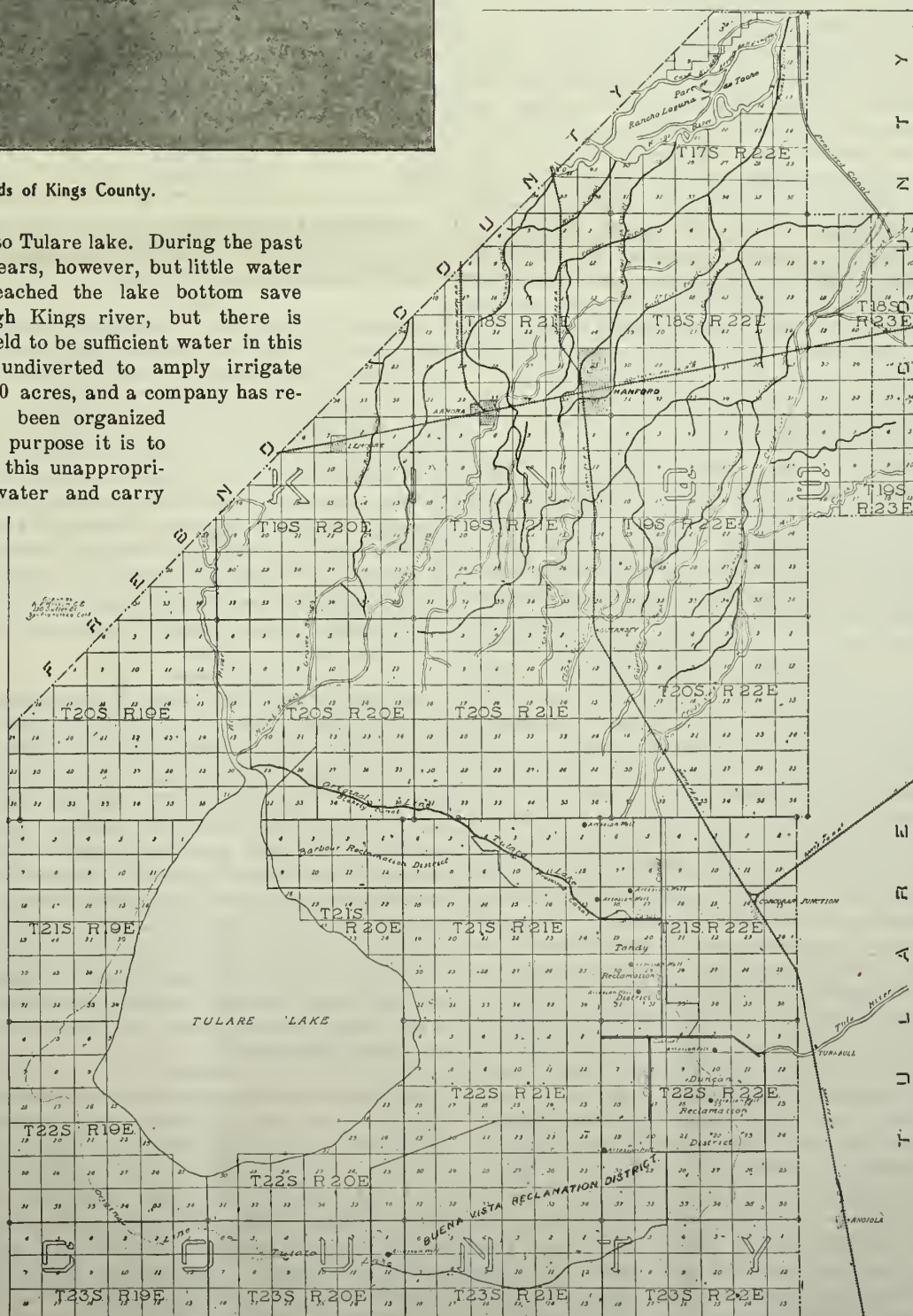
Farming a Lake Bottom.

On another page of this issue there is an interesting account of development of agriculture upon lands uncovered by the recession of the waters of Tulare lake, and we emphasize the discussion by the accompanying map of the region and view of a leading local crop now producing immense values upon the old lake bottom.

Thirty years ago Tulare lake was the largest inland lake in California—in fact, this lake covered at that time about one-fourth of what now comprises Kings county, Kings county having been carved out of Tulare county in 1893.' Thirty years ago the territory now comprising Kings county was a vast field of waste land, that is to say there was no cultivation and herds of wild cattle and horses fed upon its wild grasses and there were few residents save the Indians and early day Mexicanos. Old Tulare lake varied but little from one year to another, for each year there was about the same amount of snowfall in the Sierra Nevada mountains to feed the streams that flowed into the lake, and as there were no irrigating ditches this lake was the natural basin for the snow waters. Since 1872, however, there has been a gradual influx of home seekers and to-day Kings county has a population of 11,000, while Hanford, its county seat, contains 4000 people. In those early days the word "irrigation" was indeed a strange word and few people knew of its greatness, and for a few years the incomers planted their crops and depended exclusively upon the rainfall for its maturity. In later years, however, a wiser people settled there and old Kings river, which had been and still is the main feeder of Tulare lake, was tapped and a part of its waters carried through irrigating ditches onto the erstwhile dry lands. This tapping has been going on ever since and by this means the larger portion of Kings county has been made regularly and richly productive and old Tulare lake has been deprived of the greater portion of its inflowing water, and as a result has receded, leaving bare thousands of acres of very rich land.

The accompanying map shows the location of the many ditches and canals, as well as the location of the streams heading in the Sierras and formerly empty-

ing into Tulare lake. During the past five years, however, but little water has reached the lake bottom save through Kings river, but there is still held to be sufficient water in this river undiverted to amply irrigate 200,000 acres, and a company has recently been organized whose purpose it is to divert this unappropriated water and carry



Map of a Portion of Kings County, Showing Tulare Lake Lands.

PACIFIC RURAL PRESS.

it to the lands by means of a canal. Title to these lake lands is acquired through An Act of the Legislature of California entitled, "An Act regulating the sale of lands uncovered by the recession or drainage of the waters of inland lakes and unsegregated swamp and overflowed lands, etc. Approved March 14, 1893."

It was just prior to the passage of this Act that it became generally known that these uncovered lands being sediment or made lands were among the richest in the valley, and immediately after the securing of the passage of the above Act providing for the acquiring of the title from the State to the lands there began a rush for these uncovered lands. Homes were built around the water's edge, reclamation levees constructed, etc., and to-day Kings county challenges the world to equal its Tulare lake bottom alfalfa and other crops, but alfalfa and stock raising are the leading interests on the lake lands.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON Horticultural Editor

San Francisco, October 25, 1902.

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The Week.

The rains are assuming their seasonal prerogative and are covering the State quite widely. As we write on Wednesday, quite a business-like storm is in progress. The country north of Tehachapi has been given the customary scale of amounts from a small fraction at the south of the San Joaquin up to a full inch or more in the north end of the Sacramento valley. South of this there has been an extension down the southern coast. The aspect of affairs as we go to press promises something everywhere in the State. There is considerable late produce still out, and yet the amount brought to shelter by the early warnings of the Weather Bureau has been immense; and probably the first general rain has found the State as well prepared as it ever will be, and, if we get enough to start winter work widely, it will be generally acceptable.

Where is the wheat? The price has gone up again and there is little offering. Ships are plentiful and four have arrived since our last issue, under charter away above present rates. The ship ring, if there is one, is getting a pretty severe straining by this fall's experience. Four ships have gone out with wheat, one with barley and another with a whole cargo of flour—all for Europe—making a total value for the week of about \$450,000. Surely California is doing her duty in bread and beer for downtrodden Europe this year. Barley is \$1 per ton higher and there is little in sight—in fact, it seems as though barley was cleaned up now as well as it usually is at the close of the season, though probably there is plenty more to go. Australia is still taking Chevalier at \$1.50, but England is taking selections of ordinary barley for malting, and there is scarcely any difference in feed and export prices. Corn is scarce and high and only a jobbing trade, while oats are higher, in sympathy with barley, though oats are still the cheapest grain in sight. Rye is firmly held. Beans are quiet but firm. Mill feeds are all strong and bran as stiff as ever. Hay is steady, with a fair movement. California alfalfa seed has sold by a grower at 8½¢; Utah seed being held at 8½¢ there, which is above buyers' views. Beef and mutton are unchanged; veal has a lower range; hogs are in good demand for packing, medium and large being firm. The highest priced butter is weak, medium is steady and low-priced is firm—quite a reversal of ordinary conditions. Cheese is firm all around—with mild, new scarce. Fancy fresh eggs are declining a little and accumulating. Cold storage eggs are going out lively—often as "fresh ranch" from whatever county strikes the sign painter's fancy. Poultry has been in good shape all the week—a good demand with better average prices.

Potatoes are quiet and unchanged, with only local demand except for ship stores; eastward rail movement has stopped. Onions are rather easy. Fresh fruits are in less variety now. A few persimmons are selling well. Grapes have a little better range. Oranges and lemons are about the same and limes lower. Fancy dried apricots are scarce; some figs are selling well. There is a fair movement of almonds, and walnuts are arriving to meet a good demand. Honey is firm, except some amber, which drags a little. Hops are still quoted high, but there are few sales by growers. As we go to press we hear that the wool sales at Ukiah are slow in opening and buyers talking off strenuously.

The barley situation, as just mentioned, is quite interesting. Up to date since July 1 nearly two and a half million centals have gone out, which is considerably more than for the whole shipping year of 1900-01, and the present year will be a record breaker if there is barley enough in the State to do it. Naturally the movement is attracting attention and the Government Crop Reporter for October, just received, comments upon it. It says that shipments of barley from Pacific ports, in response to rapidly increasing foreign demands, have resulted in such appreciation of the price of this grain as to render its growing in the Pacific Coast States more profitable than that of other cereals. During the year ending June 30, 1902, more barley was shipped to foreign ports from California than in any previous year; and the demand since the date named has been so heavy and urgent as to result in the sale of the entire available supply at greatly enhanced prices. The following figures, furnished by the secretary of the San Francisco Merchants' Exchange, show the shipments of barley by sea from California, in centals, for the years ending June 30, 1892, to 1902, inclusive:

	Centals.		Centals.
1892	1,129,416	1898	3,290,479
1893	1,894,330	1899	461,333
1894	1,462,690	1900	4,003,136
1895	699,958	1901	2,119,292
1896	2,265,665	1902	4,381,682
1897	3,660,177		

This is a good, progressive showing. It is difficult to say how much barley California can shake out if the world wants it at good prices.

Speaking of grain, it is interesting to state that this week the German Reichstag has turned down the imperial government on the proposition to increase the import duties on grain. The proposition which was defeated was to fix the minimum wheat duties at \$1 50 per metric hundredweight in place of \$1.37, and the rye duties at \$1.37½ instead of \$1.25. The votes were: Wheat, 194 to 145; rye, 187 to 152. The majority was composed of National Liberals, Socialists and Radicals, and the result is the defeat of the agrarian policy. The German bread eaters are evidently stronger than the bread growers, and the disposition of the question will act in the interest of outside supply countries.

We are glad that the people of Sacramento are waking up to the need of doing something for better show grounds for the State Fair. At a meeting of the city council on Monday last one of the trustees fitly said: "The stalls are in a terrible condition, and owners of fine stock said this year that they would not bring their horses here again till better accommodations were furnished. We must act immediately and not let the impression go abroad that Sacramento will not care for what is given to her." This shows a proper appreciation of the situation. Certainly it is likely that something will happen unless Sacramento declares some sort of a dividend out of the benefits accruing from the permanent possession of the State Fair.

The best friends of any paper are its subscribers—those who take it and pay for it. They understand its valuable points best and can make them clearest to others. The publishers are very appreciative and careful of the good will of the subscribers of the PACIFIC RURAL PRESS, and are always willing to make it profitable to them to help to extend the circulation of the paper. Each one can do something. A word from them to a neighbor goes further in this direction than ten from an agent. If you feel interested write to us for particulars.

QUERIES AND REPLIES.

Figs in Southern California.

TO THE EDITOR:—I have some land near Cucamonga, in San Bernardino county, which I hope to plant out some day in the near future, and have not decided as to what I would like to plant. Would very much like the Smyrna fig, if the location is good and they are as good paying as the average fruit.—SUBSCRIBER, Utah.

Figs, except for table use and for sale to preserving establishments, have not proved very satisfactory in southern California. Growers for drying product have been as a rule disappointed in results—especially with the most largely planted White Adriatic, which sours badly on the tree. It is too soon to say just what changes will be accomplished by the planting of the true Smyrna varieties and the introduction of the blastophaga. They ought to put a new face on the whole drying proposition. About the only question is whether the great valley of southern California, open as it is to coast influences, will have enough summer heat and dry air to bring the fig to perfection. On this point Mr. W. M. Bristol of East Highlands, a little farther inland than your place, after ten years of effort with the fig, recently said in an interview in the Redland Facts: "The fig of commerce will be a success in certain portions of California, but it would be unwise to plant it except in localities having hot and dry summer climates—in other words, it requires conditions similar to the raisin, and will be a commercial success only in the regions having warm nights and early seasons, conditions not found between the Sierra Madre and the ocean." It will require actual trial to disprove a conception of this kind. We believe there are particular places at the south where just the conditions necessary to fig ripening and curing may be found, but it is well to understand that coast conditions must be effectually fenced out. The coming cured fig product of California will probably be secured in the southern half of the San Joaquin valley and in the northern half of the Sacramento valley and in the foothills encompassing them both.

Corn for Ear and Stalk.

TO THE EDITOR:—Will you oblige an old subscriber by answering the following: How early in its growth can an ear of corn be removed from the stalk without detriment to its feeding value? Would the same answer apply to sorghum and Kafir corn? the object being, of course, to get the fodder in its most palatable condition.—SUBSCRIBER, Hollister.

The ear reaches its highest development and contains most nutriment when it has received sap from the stalk to such an amount that the final drying of the kernels does not cause shrinking. Full, plump grains are best for feeding for growing or for any other useful purpose. It is not possible to say in words just how this can be determined; it must be learned by experience gained through close observation of the kernels plucked at intervals. While it is true that corn plucked too early will be below its best estate, it is also true that most of our corn is left too long on the stalk and the latter loses much of its feeding value by useless evaporation. In siloing, the corn is not cut until the ears are well glazed, because greater nutriment is gained by the delay, and yet the stalk is succulent enough to silo well. For seed perfection, of course, the ear must be left in place longer, but just as soon as experience shows a condition which will not be lost afterward by shrinking and shriveling, it may be safely gathered and the stalks cut at once. Such stalks are vastly more nutritious than the wind and rain swept "corn fodder" which is often secured. The same general considerations hold with sorghum varieties, of which Kafir corn is one.

Grasses for Hill Clearings.

TO THE EDITOR:—I am clearing a rough hillside for pasture. It was covered with timber and is high and dry, about 400 feet above the valley. Will you tell me what grasses would grow best on such land for a pasture for cows and horses?—H. A. SCHRAM, Upper Napa valley.

We should sow English rye, Orchard, Hungarian brome grasses and burr clover. All these seeds can be had of the seedsmen. There are other grasses which may on further trial displace these, but no commercial supply of seed is now available. With your elevation and distance from the coast, these

plants ought to take hold well and the grasses should bunch up well and hold life in the roots through the summer. Sow as soon as you can, for these plants are hardy and much of their success will depend upon getting an early rooting.

San Jose Scale on Apples.

To THE EDITOR:—I send you couple of Baldwin apples. I have two tons of them picked and the agent who was to take them is afraid of the quarantine officer if he sends them below for sale. I sprayed them with lime and salt hot and think they might have been marked with the liquid or dry lime used since. Please let me know at once if it is a scale or catching disease, also the formula for use the coming year.—GROWER.

The apples you send show that you did not succeed in killing the scale, for the red spots upon the apple are caused by the young San Jose scale, which ran out and located upon the skin while the apple was growing. This red spotted appearance is characteristic of the work of the scale and will be readily recognized by the inspectors, and the chances are that the fruit will be condemned. There must have been something the matter with your preparation of the lime, salt and sulphur wash, for if it had been prepared properly and used after growth began it would have burned the foliage at the same time that it killed the scale and the effect of it would have been very apparent upon the tree. This wash properly made cannot be safely used after the growth has started. Its efficiency lies in killing the scale on the twigs before growth begins. Perhaps you did not cook it a sufficient length of time, or if you need only lime and salt you could not make an effective wash. You will find the formula for the preparation of the wash in the PACIFIC RURAL PRESS of January 11, 1902, and you will notice that emphasis is placed upon the protracted boiling, which brings out the killing properties of the ingredients. We shall probably have occasion to print the formula again before the time comes for the use of it.

Death of Young Grafted Walnuts.

To THE EDITOR:—I send you a package containing a young French walnut. It is the third that has died. I desire to know what is the trouble and remedy, if any. The trees were claimed to have been received from France already grafted.—SUBSCRIBER, St. Helena.

The tree was a small grafted walnut with about a foot of growth on the scion before transplanting and a couple of inches new growth since then. The trouble consisted in dead bark, both on the stock and on the scion, extending both ways from the graft joint. It had a blackened appearance, resembling bacteriosis, and, to determine whether this existed or not, we sent the specimen to Mr. Newton B. Pierce of Santa Ana, who is the great authority on this subject, and he kindly replies as follows: "I do not consider the injury seen on the grafted roots due to bacteriosis. It is probably due to the imperfect union of root and scion. Where the union is perfect, the cortex of the root is healthy; where imperfect, the cortex has died back. This entire system of root grafting of the walnut is wrong, and while it is done on account of the higher percentage of "catches" resulting, the trees are apt to become badly diseased at the unhealed parts of the cut surface of the spongy root used."

Peach Pits for Nursery Use.

To THE EDITOR:—We are thinking of setting out a nursery and have purchased and bedded down for sprouting a ton of Salway peach pits. We are now told that seedling pits are the only ones which will produce stock free from root knot. Can you inform us if such is the case, or whether it is the quality of the soil that induces that disease?—NURSERYMAN, Los Angeles county.

There is no reason to believe that seedling peach pits will give stocks free from root knot—in fact many knotted roots have come from seedling pits. There is reason in the view that seedling pits may be better for general vigor because plants are sometimes weakened by continued propagation by budding and a return to the original seedling may therefore be good, but to enjoy this advantage one must be sure to get a thoroughly strong, vigorous seedling. Seedling pits taken without reference to the vigor of the tree which bears them are inferior to good strong pits of a yellow freestone, like the Salway. It is the general practice to use such pits as you have selected. In fact, certain large propagators at the

East are securing peach pits from cultivated and budded peach trees in California, having reached the conclusion that our well grown pits are better than the seedling pits which they can pick up here and there in the East and South.

The root knot is caused by a fungus which has been thoroughly identified and it occurs upon the trees because the germs are in the soil, or are introduced into the soil after the tree has started to grow. It is a good idea to use new ground and good strong pits and then if you have root knot discard all knotted trees in making your nursery sales.

Stock Feeding.

To THE EDITOR:—Where can I get Algerian peas for seed? Will they make good winter pasture for hogs if sown early? I wish to buy cattle and feed. Would it be profitable to buy cattle and feed red oat hay for beef? Would it be best to feed cattle at 7 cents per pound or sell hay at \$6 or \$7 per ton?—READER, Potter Valley.

These Mediterranean peas were only recently introduced for experimental purposes. We do not know of any commercial supply which would make them cheap enough to put in for crop purposes. That must come later if the peas prove valuable enough to cause them to be largely sown. They are hardly likely to be better than common field peas for winter growth and feeding.

You have a close proposition with the feeding mentioned. If you have some pasturage to use with the hay you might get a pound of weight from about twenty-five pounds of oat hay, if you get steers about two years old. At the price you mention your hay is worth about 1/3 cent per pound, and it would, therefore, take about 8 cents to make a pound of 7-cent beef, with some manure to help even up the cost. If you had the steers of your own raising to realize upon you might use the hay to advantage, but to buy at present prices would be rather risky. We would sell the hay and let some one else have a chance to get rich.

The Neva Munson Grape.

To THE EDITOR:—In answer to your request that I give the good points I find in the "Neva Munson grape," I mention these: First, the healthy and vigorous growth during a period of wholesale dying of vines. Second, the great productiveness of medium-sized clusters of grapes. In the great crop year of 1897, while in the fifth year of growth, this vine bore thirty-four pounds of grapes, since that time the yield has not been below twenty-five pounds by ordinary vineyard culture. Third, the grapes are not suitable for table use, but they make a pretty good claret wine and furnish an excellent material for first-class champagne.—WM. PREFFER, Cupertino.

Thank you. Such direct statements of experience are very valuable. We always welcome brief straightforward declarations of experience on the cultural subjects which arise in our columns. We enjoy readers' answers to our questions more than our own attempts at answering their questions.

Rye Grass Seed.

To THE EDITOR:—Will you kindly tell what kind of seed the enclosed is?—DEALER, San Francisco.

The seed which you send for identification is English rye grass (*Lolium perenne*). The seed of the same grass coming from Australia is sometimes called Australian rye grass, but the plant is the same. It was held on the first introduction, twenty-five years ago or more, that this grass gained some aptitude for our climate by its process of acclimation in Australia. Whether this was true or not has never been actually demonstrated by experiment, and during recent years *Lolium perenne* seed from England has been used to fill orders for Australian rye grass, and *Lolium perenne* seed from Australia has been used to fill orders for English rye grass. So far as our observation goes, there is little difference in the source of the seed, so far as its adaptation to California goes, and excellent results have been secured by the use of seed from both sources.

Partial Decay of Strawberry Plant.

To THE EDITOR:—I send you a strawberry plant which seems to be affected by some kind of disease. This plant was taken from a small patch of berries, they were planted about the middle of last February and have made a fine growth of crowns. What is the matter with this plant and what can I do to prevent the spread of the trouble?—READER, Moss.

We do not find any specific disease in the strawberry plant which you sent for examination. There

seems to be a partial rotting of the root crown, which causes the death of some of the leaves. At the same time healthy leaves and sprouts are appearing from the same crown, indicating that only partial attack is present. It seems to be due to excessive water just at the point where this plant stood, and the treatment which suggests itself would be to provide drainage to prevent the gathering of the water.

For Willow Sprouts.

To THE EDITOR:—Is there something that could be put on willow roots when they are mostly grubbed out to keep them from growing again?—SUBSCRIBER, Salida.

According to recent experiments in Australia, the best plant-killing potation is arsenite of soda—one pound of the substance to ten gallons of water. This proved more effective than dilute sulphuric acid, carbolic acid and other chemicals used experimentally in spraying upon prickly pear for land clearing, and the arsenite of soda alone killed the plant, top and root, when injected into the tissue. We are inclined to believe, however, that watchfulness and grubbing here and there, as soon as sprouts appear, is the best recourse.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 20, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warm days and cool nights prevailed during the week. No damage was done by the rain of last Monday, as orchardists had been advised to stack drying fruit, and favorable weather followed the rain. Prune drying is nearly completed. Grape picking is progressing rapidly and heavy shipments are being made. Wine making continues. Mountain apples of excellent quality are very plentiful. Citrus fruits are nearing maturity and are in good condition; oranges will probably yield a heavy crop. Hay baling is not yet completed. Plowing and seeding are progressing in some places.

COAST AND BAY SECTIONS.

Fair, warm weather followed the light rain of last Monday, and fruit drying progressed rapidly. No damage was done by the rain, and in some sections it was very beneficial. Prune drying is nearly completed; the yield is heavy and the fruit of fair size. Grape picking continues; the crop is heavy in nearly all sections. Wineries are in full operation. Apples are plentiful and generally of superior quality. Citrus fruits are in excellent condition. The southern bean crop is nearly all harvested and thrashed; the yield is heavy. Corn and potatoes are yielding good crops.

SAN JOAQUIN VALLEY.

The weather during the past week has been generally clear, with warm days and cool nights. Raisin making and prune drying have continued under favorable conditions. The first crop of raisins is nearly all ready for the packing houses. The crop was large and of excellent quality. The second crop, which is also large, will soon be ready to gather. The wineries are running to their full capacity. Egyptian corn and sugar cane are most all harvested. Alfalfa thrashing is about over. Prune drying is progressing rapidly and the greater portion of the crop has been saved. Burning of stubble, plowing and grain seeding are making good progress. Rain is needed by grain growers. Stock of all kinds are in good condition.

SOUTHERN CALIFORNIA.

Cloudy or foggy weather prevailed along the coast, but in the interior conditions were favorable for raisin making and fruit drying. El Cajon raisins are reported of unusually fine quality, and in all that section the raisin crop is said to be much larger than for several years; the crop is being handled as expeditiously as possible and will probably all reach the packing houses before the fall rains. Canneries are running on late peaches, tomatoes and pumpkins. Wine making is progressing. Walnuts are of good quality, but the yield is light. Citrus fruits are in good condition. Sugar beets are nearly all harvested. Bean harvest is completed; the yield is less than that of last season.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, October 22, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.30	.98	4.31	3.18	66	46
Red Bluff.....	1.46	1.50	1.93	1.70	80	48
Sacramento.....	.52	.64	.58	1.14	78	50
San Francisco.....	.45	.65	.82	1.25	70	52
Fresno.....	.12	.12	.59	.78	90	44
Independence.....	.00	.29	.77	.52	80	44
San Luis Obispo.....	.32	.32	.98	1.54	80	44
Los Angeles.....	.00	T	.12	.66	78	48
San Diego.....	.00	.90	.06	.41	70	54
Yuma.....	.00	.11	.22	.95	96	56

THE DAIRY.

Care of Milk for City Supply.

By DR. W. N. SHERMAN of Fresno at the California Dairymen's Convention.

Milk is a soluble food that in itself is a complete balanced ration for the human family—perfect, yet perishable, and even poisonous when subjected to changing temperatures or unsanitary surroundings. Probably no other food product is equally susceptible to the same conditions. Its value as a food depends entirely upon its purity, and its purity is wholly dependent upon the methods observed during and after it is drawn from the cow.

PHYSIOLOGY AND COMPOSITION.—The water, the ash and the cheesy matter are filtered directly by the udder from the cow's blood. The fat globules are held in suspension, and are produced from the cow's own substance or body, so that milk is said to be more than filtered blood, which it strongly resembles in composition, if we substitute the oil or fat globules for the blood globules. The standard of milk is based on its component elements—water, solids and fat. Many cities formulate a standard to which the product must conform before it is approved as a salable product. The standard milk of the Chicago market contains 87½% of water and 12½% solids. Its solids are casein and albumen 3.30%, fat 3.50%, sugar 5% and ash .70%. These are the component parts of average milk. The fat is the most variable portion, and is not of the greatest food value, for it is merely of heat-producing value in the human economy, while the albuminoids contained in the skimmed milk are the same as lean meat. One quart of milk is equal in food value to three-fourths of a pound of beef. The butter fat is lighter than water, while the other constituents are heavier, the average specific gravity being 1.032. Rich milk is lighter than poor milk, the average of one quart being 1.18 ounce fat, 1.18 ounce casein, 1.76 ounce milk sugar and .35 ounce of ash, held in solution by 30.62 ounces of water. This great dilution, its specific gravity and temperature when freshly drawn, make it a very favorable solution for the development of bacteria. When freshly drawn from the cow's udder, it is slightly alkaline, and almost immediately minute germs set up the work of fermentation. First the sugar changes, then the cheesy matter and lastly the fats. The micro-organisms cause the rapid souring of milk to vary in their action, some producing lactic acid, which curdles the milk, others producing a similar result by alkaline reaction. Alcoholic fermentation, as in koumiss, is sometimes produced and occasionally the development of pigments results in blue or red milk.

SOURING OF MILK.—The souring of milk is the result generally of the development of the micro-organism called the bacillus acid lactici, discovered in 1877 by Lord Lister, the eminent discoverer of antiseptic methods in surgery. There are several other organisms present, but the lactic acid bacillus is the chief factor in souring the milk. These organisms may be seen under the microscope in rapid motion, and the various bacteria can only be separated and identified by selective staining, as in microscopical methods used with other fluids containing bacteria. That cream sours first, often several hours before skim milk from the same milking, is well known to all dairymen, also that milk sours more quickly in a long, narrow can than in flat open pans—a result due entirely to cooling and aeration. These facts are all clear if we shall always remember that all bacteria require certain conditions of temperature, moisture, etc., for development, hence the longer milk is kept warm the quicker we shall have bacterial development.

OTHER CHANGES IN MILK.—Now, we have been dealing chiefly with the bacillus common to milk. If we should attempt to consider the various bacteria that reach the milk from external surroundings, we might be led into an almost interminable bacteriological discussion. Suffice it to say that all the surroundings contribute bacteria to milk, and these bacteria have their influence in rendering the milk impure and unfit for food, as well as unpalatable and disgusting. When we have bacterial knowledge in the dairy, as well as in the creamery, we may succeed better in securing clean, wholesome milk, for the dairy is generally the source of all infection; and when the milkers know the properties of fresh, warm milk as a fine culture medium for bacteria, they can better understand why it should be so carefully protected from contamination through the atmosphere and other sources. Milk as it comes from the cow is supposed to be sterile, even as the blood is, but it is impossible to secure the milk in a sterile condition without the use of methods and appliances that are not practical, and the only thing left is to make the best of the matter, as it is, by reducing the sources of contamination, by observing strict rules, by protecting the milk from changes, by cooling and aerating and by keeping in clean containers in the proper temperature.

METHODS OF CONTROL.—Even when the milk is drawn under the most favorable conditions, the immediate aeration and cooling are very important and should be done when the air is clean and free from

dust and odors. In all solutions favorable to the development of spores and bacteria the keeping cool greatly retards their increase, and this is in proportion to the temperature.

In our laboratories we use small incubating ovens for developing bacteria for study and experiment, and we know just how much heat and how much time it takes to fully develop each variety. This applies to milk, as the following will show: Milk containing 975 bacteria subjected to a temperature of 59° for three hours multiplied 1.06 time, six hours 2.5 times, and in nine hours 5 times, whereas at 95° they multiplied in three hours four times, in six hours 1290, in nine hours 3794 times. The common source of contamination of milk is from contact with the air, particles of dust, epithelial cells and hair from the cow's udder, and bacteria from the feet of flies. We might also include unclean vessels, and dirt from the hands, beard or hair of the milker.

When we consider all these sources it would seem to justify a hopeless view of any effort toward cleanliness. This is not so, for, while we cannot practically recommend bacteriological cleanliness, we can carry it out practically by observing rules with which all are familiar. Our ancestors were totally ignorant of the science of bacteriology and unacquainted with the bacteria that to-day figures so largely in our lives, yet they knew how to clean their vessels, and how to keep milk and cream sweet for a reasonable time. We would make our rules as simple and yet as efficient as possible to carry out necessary cleanliness by first having well cleaned, well ventilated, whitewashed barns and stalls, cement floors, good drainage, gypsum disinfection of floors, and then have clean, careful milkers and clean cows.

Dry hand milking is always to be recommended and the milker should have clean hands and clean clothes. In California it is rather difficult to carry out these rules, as our best milkers come from the great unwashed masses of the south of Europe. As good milkers are scarce, the dairyman has often to close his eyes to minor matters if he can accomplish the greater ones. Our hope at present is that we may have married men on the ranch, whose wives will milk. With women in the dairy we have clean milk and gentle cows. An unsympathetic, cross or brutal man milker is as detrimental to a standard of production as a sack of onions would be in the creamery.

The cow should be carded and brushed in a room distant from where she is to be milked; the udder and thigh, having had the hair clipped, should be washed off by a special man kept to do this work, allowing the cows to enter the milking stalls clean. The milker may be provided with a clean, dry cloth to wipe or dust off the udder before milking. The milk, after drawing, should be at once strained through cloth into the cooler, and through a second cloth into sterilized cans. This should be done in a milk room screened so as to exclude flies. Outside yards should be cleaned daily, fences and stalls kept well whitewashed, gutters and floors well cleaned and spread with gypsum, which is the best absorbent of odors, is a good disinfectant, and adds greatly to the fertilizing value of the manure. Animals that seem to prefer filthy beds to clean ones should be disposed of.

CLEAN UTENSILS.—Milk cans should be first washed in cold water and, after soaking a few minutes, scrubbed out with a brush so as to loosen all particles adhering to the crevices or seams. Hot sal soda water may be used next, with thorough scrubbing with brush. Lastly, the cans should be turned upside down over a jet of steam for a few minutes, and when removed turned upside down on the peg of the can rack, where they will dry and be ready for use when needed.

It is well to avoid soap, soapy powders and drying towels, as they are germ collectors. All rough or rusty places in cans should be soldered or retinned before using old cans. Milk poison, or tyrotoxin, is caused by unclean vessels. We believe that with careful treatment of milk along the lines referred to there is no necessity for pasteurizing or sterilizing, as both methods detract from the milk its natural flavor, and render it very unpalatable to the consumer.

STERILIZATION.—The practicability of sterilizing milk and cream for local trade was demonstrated by the Wisconsin Dairy School and was adopted by many dairies, but it has since been largely discontinued, as it was found that with the same antiseptic cleanliness the milk kept long enough for all practical purposes, and the pasteurizing was an unnecessary expense.

Pasteurized milk, as delivered by the milkman, is as dead to the palate as distilled water, and people will not pay extra for an article of food that does not commend itself to their taste. Pasteurized milk is not so easily digested as the natural, and for children and individuals the germs ordinarily contained in the milk are less harmful than the loss of casein in pasteurization. For ice cream and for butter of a mild flavor pasteurized cream is good enough, but for milk it seems to offer no particular advantage over the best brands of condensed milk.

Another objection is that it is said to cause scurvy and the digestive ferment is destroyed.

CHILLING AND SEPARATION.—Milk and cream well chilled, when freshly drawn and placed in refriger-

ators at 33°, keep sweet for three weeks. Many of the Eastern dairies, selling certified milk, use the separator to remove impurities. This acts as a centrifuge and deposits all impurities of a solid nature at the periphery of the separator bowl, where it is permanently lodged. After cooling, the milk and cream can be again mixed together or run together from the separator over the cooling trough into the bottling tank. Milk from our own dairy has been carried on a camping trip, during the heat of summer, and remained sweet for four and one-half days, being carried in a camp wagon. In Berlin milk is filtered, to remove mucus, epithelial cells, etc., but separation seems to do the work equally well.

PRESERVATIVES.—Education along the lines of preserving milk by natural and harmless methods should be extended among the consumer as well as the producer. After the milk is delivered it is frequently treated carelessly or neglected and allowed to remain in a warm place, or it may be placed in a refrigerator with meats and other food; and when it is spoiled through the carelessness of the consumer, the milkman is blamed for it. This is too frequently the case and is one of the reasons that tempts the dairymen to resort to preservatives in order to satisfy the customer with an article that will keep longer under unfavorable conditions. Preservative and its various mixtures are widely advertised and strongly declared as harmless preservatives of food products. The law should reach the makers and sellers of these formalin products, and thus remove the cause for their use.

The London Lancet relates an experiment in feeding kittens on milk containing boracic acid—80 grams to the gallon of milk. All died within four weeks, while other kittens fed on the same milk without the acid thrived. Deadly results came from milk treated with formaldehyde—the younger the kittens the quicker they died.

In the last few years a more deadly drug has been introduced—formalin—a concentrated product of the above, where one part was added to 1000 parts of milk containing 640,000 germs. After forty-eight hours the milk was sterile and remained so for four days. Formalin is volatile, and after a week's time the above amount can scarcely be detected. It renders the proteids insoluble, and by adding 1 dram of pepsin and 10 drops of hydrochloric acid to a mixture of one part of formalin to 1000 parts of milk a normal digestion is not interfered with and the danger of using the drug is lessened. "Freezine," a trade name, is practically the same, and the various solutions recommended for the various food products is only a different strength solution. There is positive danger in using more than one part to 5000 of milk for healthy people, while those of weak digestion and babies can not take it at all.

While we in America are seeking to protect our food products from these poisonous adulterants, Germany astounds us through no less an authority than Prof. Lieberich, who, at a recent Berlin convention, said he did not believe that in the proper use of borax and boracic acid they were any worse than pepper and mustard. The words "proper use" were not defined, but it was claimed as untenable for Germany to pass laws forbidding their use. Dr. Gerlach of Wiesbaden declared that boracic acid had been in use for decades and other speakers declared it harmless. In the face of this, does it seem consistent that they should be so sensitive to a little sulphurous acid and declare against admitting our California dried fruits? The British Government, after careful investigation, saw no reason for prohibiting borax and boracic acid in food products, and the German Government decided the same way.

The people of the United States are not great milk consumers compared to other nations, as we use only 2½ gallons per capita annually, while the Scots and Hollanders use two-thirds more. The consumption could no doubt be greatly increased by the selling of a clean, wholesome, unadulterated milk from dairies, kept clean and open to inspection.

There is no doubt but that the whole solution of the question, "How shall we best treat milk for delivery to consumers?" is clearly settled by observing perfect cleanliness, clarification and aeration. While pasteurization will lengthen its keeping and condensation adds to its preservation indefinitely, we can find in these simpler methods all that we desire. Will the consumer pay the extra expense incident to carrying out sanitary measures in the dairy? If the dairyman adds extra expense to the production of clean milk, the consumer must pay extra for a better article. The loss to high-class dairies from loss and breakage of bottles alone is something startling. This can only be settled by the adoption of some cheap substitute in the shape of a paper carton. These can be made of sterilized paper and will fill the need perfectly.

SUMMARY.—In conclusion, a synopsis of our rules for furnishing pure milk to the consumer is about as follows:

I should recommend for every city or town one or more well paid inspectors of dairies—a man of good common sense, honest and thoroughly active in the duties, which would be to inspect all dairies and see that the rules laid down by boards of health or other city authorities are carefully carried out. These rules would be those referred to this paper.

I should not try to put all in force at once, but

would begin with a few rules at a time and gradually add to them as the dairyman progressed in his willingness and knowledge. The city government or the board of health, making these rules, should be men of high integrity, fair and honest, untainted by politics, unbiased and beyond the influence of any clique or corporation, and they should carefully consider the side of the producer as well as that of the consumer.

A careful, competent inspector can soon be in harmony with dairymen, if they are shown fair consideration and the rules formulated for him can be gradually enforced and finally completed as to their application and detail. The dairyman must be educated up to the standard desired. This can not be done all at once, and it is not wise to attempt to do it. After this matter is adjusted with the dairyman, and he has become obedient and reconciled, he will certainly see the advantage of the system and will willingly cooperate in other matters for his own interest.

Next we should recommend the establishment and maintenance, either by co-operative or other methods, of a refrigerating plant, when each dairyman shall have the privilege of storing his milk and cream until he is ready to deliver it. Then educate the consumer by distributing a little reading circular occasionally with the milk, or have the directions printed on the outside of the paper carton, and we believe the question is solved.

AGRICULTURAL ENGINEER.

The Alkali-Drainage Investigations at Fresno.

By C. G. ELLIOTT, Expert in Charge of Drainage Investigations.

It is doubtless known to many, if not to all, in the vicinity of Fresno, that surveys have been made by the authority of the U. S. Department of Agriculture under the direction of the Division of Irrigation Investigations. Prof. O. V. P. Stout of Nebraska has conducted the work with the view of securing such data as would be necessary to use in handling the drainage question intelligently. A large amount of work has been done, results of which will be made available to those interested in this matter as soon as they can be put in suitable form.

POINTS IN VIEW.—The object of drainage in this vicinity is:

1. To prevent the plane of soil water from rising to such a height that evaporation will take place in such a way as to deposit alkali at or near the surface.
2. To retain the water at such a depth that the roots of vines and trees will not be injured by the superabundance of moisture.
3. To reclaim land now seeped up and injured by an excess of alkali which has been brought to the surface by the repeated annual rising of the water line of the soil.

How efficient drainage may be secured with the least outlay is a question which, while it concerns all, applies to some with a peculiar force, as they contemplate the gradual wasting of their fruitful lands.

THE LOCAL CONDITIONS.—The tract of land for which drainage is most desirable, and for which it will prove of greatest immediate value, is a plane without the shadow of natural drainage valleys into which water can be gathered. This plane has a slope of 5 feet per mile towards the west and southwest. The main irrigation canals, as a rule, run with the slope of the land at such intervals and on such locations that the land may be irrigated from both sides of the canal.

It can not be denied that the larger portion of the excess of water formed in the soil comes directly from the seepage of the canals passing first downward, and, then by reason of a constant head, percolating rapidly through the lower soil, and afterwards reappearing at the lower surface levels.

THE METHOD.—From the surveys and such other data as have been gathered, we think that the public drains should be constructed on east and west lines one-half mile apart, and that they should be from 5 to 7 feet deep in order to retain the water level at the proper distance from the surface. The capillary power of the lighter soils appears to be, in some instances, as much as 4 feet—that is, water will rise a distance of 4 feet in the soil above the water line. With main drains located as indicated, land lying between them may be reached by lateral drains and treated as found necessary, using the mains as drainage outlets.

The choice between open ditches and closed drains is a matter meriting careful attention; the depth to which they should be made will necessitate a right of way 24 feet wide aside from the land required for excavated earth, which must be cared for. Not many of the avenues are wide enough to receive a ditch of this kind, while a right of way through valuable vineyards and orchards would, in most cases, be costly, and in some impossible to obtain at any reasonable price. As far as drainage is concerned, they are not as efficient at maintaining a low water level as closed drains of proper size. On the other hand, provision must be made for the cleaning of the tile-drain system to prevent the accumulation of roots, and in either case the system must be cared for with efficient persistency.

THE OUTFLOW.—The disposition of drainage water by gravitation alone would involve the construction of a system of long open ditches having an outlet in a common intercepting ditch, which should run southwesterly across the west end of the entire tract out into the plains. In this case the entire tract would have to be treated as one district constructed and operated as such.

It has been ascertained that the ordinary run and drainage water does not contain enough alkali to make it objectionable for irrigation purposes, as it often has been regarded, so that the water developed by the drainage of the land, by whatever method may be adopted, will be an available irrigation supply.

The plan proposed of pumping water which is collected by the drainage system into the supply ditches seems to be open to no objection, except the expense in installing and maintaining a plant. The division of the entire tract into districts of from 1000 to 1600 acres will permit the use of drain tile from 10 inches to 22 inches in diameter, whereas larger districts would require drains which would cost more than the construction of a separate pumping plant. A district may be formed and operated by itself, or a group of them may be placed under one organization, as land owners may elect.

The simplicity and efficiency of pumps and the adaptability of gas engines and cheapness of fuel oil will make it possible to operate and care for a system where two or three districts are placed in one group, at a cost estimated not to exceed \$1 per acre per year.

It should be understood that no system of drainage in this soil will care for itself if efficient service is desired. A sufficiently intensive system of fruit growing must be practiced to pay for and maintain drains with which some annual expense for maintenance is connected.

The cheapest system which can be built is one in which the combination of open ditches and tile drains is used, the open ditches being employed where the tile required would be greater than 14 inches in diameter.

Taking the best quotations we can get on pipe at present, the complete drain-tile system will cost from \$12 to \$14 per acre; but with better prices which may possibly be obtained, the cost should be reduced to \$10 to \$12 per acre.

There are many other points which have a prominent bearing upon the matter, and which must be necessarily considered; but these may serve to bring the facts before the attention of readers, and indicate the data for estimates which are now being worked out.

LOCAL TILE MANUFACTURE.

In an interview with the Republican reporter, Mr. Elliott gave the following additional information:

In considering the details of the drainage work proposed for this locality, it is found that the prices of excavation and of drain tile are the controlling items entering into the estimate of cost. In some sections of Colorado box drains made of spruce lumber are used with success in draining alkali land, which is devoted to alfalfa, potatoes and sugar beets. The argument used that lumber, when kept saturated with water, is lasting, is correct, but it will doubtless be found that portions of the drain will not be saturated continually, and hence will soon decay; at least, that is the history of board drains elsewhere. For obvious reasons, they ought to be impracticable here, except where the pressure of quicksand might necessitate their temporary use.

It is the experience of those who have used drain tile that shipments from San Francisco and Los Angeles, the nearest points of manufacture, are quite expensive. The best prices quoted by these concerns are used in estimating the cost of the Fresno drainage, with the hope, however, that much lower prices may be obtained where construction begins. It has been suggested that drain tile should be made here, and I understand that the matter has received some attention from our clay workers who are in the brick business.

I have taken occasion to examine some of the available clays which may be obtained within 20 miles of the city, and have found a striking similarity in the adobe soils, as they are called. Some are a little heavier than others, but elements of clay are silica and alumina—the latter necessary to make it plastic, and to act as a binder to unite other elements in the molding and drying and burning of the ware. The essential elements of a clay are silica and alumina, which for pipe manufacture should be in the proportion of 40% to 60% of the former to 20% to 40% of the latter.

The analysis of the adobe clays rarely show more than 8% to 10% of alumina, but give as high as 80% of silica and other insoluble substances, granite sand being prominent. Some finer surface fruit soils show less than 1% of alumina. The other substances present, such as iron, magnesia, lime, etc., would probably not be detrimental if the clay contained sufficient alumina. It is, further, quite probable that if a high-grade clay—that is, one containing a high per cent of alumina—can be found and mixed with the adobe, a good drain tile can be produced. Tile should be hard burned, vitrified, if possible, true and uniform

in shape. To manufacture such, a good clay will be essential.

It is quite possible that a bed of fine clay or of potter's clay can be found in the hills which may be used to supply the deficiency so marked in the clay which is here used for making brick. A little experimenting and testing in a practical way will be necessary after a clay containing the essential elements is found; but the clay worker who will do this and succeed in producing a good drain tile will contribute much to the industrial wealth of this section, of which he may expect to receive a liberal share. In view of the possibility of the establishment of such an industry near the city, such investigations should receive every encouragement. Some of the factories which ship their tile here get all the material which they use from distant points, and thereby incur large bills for the transportation of their raw material to their works.

Fuel oil for burning, which is usually a large item in the cost of manufacture, is here reduced to a minimum by reason of the proximity of the oil fields. Upon consulting our brick men, I find that the cost of burning brick is as low as it is in Eastern yards, where the most favorable prices of coal prevail. It is certainly a matter which merits further investigation.

THE POULTRY YARD.

The Fowl Tick and Its Treatment.

We have had this pest under discussion frequently as its presence in the Sacramento and San Joaquin valley is sometimes painfully apparent. Local experience has been that spraying and fumigating houses and sheds are largely useless. We have already given the Australian observations, which agree with ours. Only heroic measures seem to be worth making. In the last received issue of the Journal of Agriculture, of Western Australia, there is an article on the fowl tick which contains information which our poultry people in tick districts should know.

LIFE HISTORY.—The female, which is larger than the male, lays a great number of eggs. The eggs are laid in clusters from 30 to a 100 or more. In some cases even the young are born hatched. The eggs are laid in crevices of wood work, or under the bark of trees, or in any sheltered situation. The young are soon hatched. They are about one-twenty-fifth or one-thirtieth of an inch long. They possess four distinct pairs of legs. The anterior pair are short, and extend parallel to the mandibles. The anterior pair of legs and mandibles project in front of anterior end of the body.

The adult parasites frequently moult, and seem, even when deprived of food, to regain new vigor after moulting. They can be kept nine months, and even longer without food.

HABITS.—They are nocturnal in habit. They hide by day in the crevices of the fowl houses, or other secluded places, and may even perhaps hide under the wings of fowls, and they issue forth at night to commit their depredations. They prey on the blood of fowls, and cause anæmia and death. When they have sucked themselves full of blood they fall off the fowls and retire into the crevices, and come out again when hungry. When they bite their victims they may also inject a poison into their blood streams. The *Ixodes plumbeus* injects a poison into its victims. Its bite sets up considerable irritation around the spot. The *Argasides* creep in masses upon their victims and get under their wings and legs.

SYMPTOMS PRODUCED BY THE TICK.—The symptoms are indefinite. The fowls droop, refuse to eat and drink, and in a few days they are unable to move about, and die of exhaustion. As the ticks are not, except in rare cases, seen about by day the cause of the mortality may for a long time escape notice, but examination of the fowl houses at night will eventually lead to the discovery of the cause.

REMEDIAL MEASURES.—The *Argasides* are very tenacious of life, and the only way they can be destroyed, when found on the bodies of fowls is by resorting to remedies that, whilst suffocating them, will not injure the birds. To kill these pests it is necessary to block up their stigmata or, breathing pores, by which air is admitted to the air tubes. When their breathing is arrested they die practically of suffocation. It has been found, by actual experiment, that kerosene alone is not an effective remedy, but that kerosene and soap emulsion is. Oil alone is not to be relied upon, but a mixture of oil (two parts), caustic potash, 10 per cent solution (four parts), and kerosene (six parts) is a deadly compound to tick, and makes a most effective dip. Mixtures of kerosene and oil bring about death, so also do mixtures of oil and caustic potash. Strong solutions of ammonia in time kill them, but alcohol entirely fails to injure them. Strong solutions of either arsenious acid or perchloride of mercury are absolutely worthless remedies.

When fowl tick appears on a place there is no other course open, if the owner wishes to rid himself of the pest, but to pull down wooden fowl houses and erect corrugated iron ones capable of being readily

dismantled. The houses should from time to time be dismantled and washed with solution of lime and sulphur. All places that harbor tick should, where practicable, be burnt, but where this is impracticable all crevices should be cemented up and coated with tar. Tick hide sometimes under the bark of trees, and such trees should be uprooted and burnt. No half-measures are of any use in attempting to exterminate this pest, but the most drastic measures must be adopted to secure successful eradication. All crates arriving from places where fowl tick abound should be destroyed, as, by means of such crates, the disease may get introduced into localities previously free from it.

THE FIELD.

The Occurrence of Grain Smut.

TO THE EDITOR:—I noticed an article in your last issue about smut in grain, especially in wheat, and about the depth of planting wheat, etc.

I don't think the depth of planting has a thing to do with smut in grain. I have seen smut lots of time and in every case it was where they did not bluestone, as they ought to have done. I have raised wheat for a good many years, but never raised smut, and if you care to print this explanation I will tell you how I bluestone my seed:

THE METHOD.—First have a dipping trough or box that will hold three tied sacks set on their ends, each holding about 100 pounds. From this trough have a good long drain board. I use a wagon bed made strong and tight. I use about six or seven pounds of bluestone to one ton of wheat; I would sooner use eight pounds than five. The easiest way to dissolve bluestone is to put it in a sack, hang the sack in the mouth of your dipping trough, keeping the sack away from the bottom of the trough. The bluestone will in this way dissolve as soon as you are ready for it; then dip your sacks, leaving each sack in about three minutes, well covered with the water. If it is done this way I will guarantee you no smut. I don't care how you plant your seed. Sow as soon as convenient after bluestoning. I always sow as soon as the seed dries and plant about 3 to 4 inches deep. I hope our friend will understand this explanation and that he will have no smut. I treat barley just the same; oats I don't know much about.

Rio Vista.

SUBSCRIBER.

AFTERWARD, BUT NOT BECAUSE.

TO THE EDITOR:—Some weeks ago I was at the farm of Robert Dunning & Son of St. Johns, Glenn county, Cal. While looking at their growing broom-corn they asked me the cause of so much smut. I did not know, besides I was a stranger in California. After reading the question in the PACIFIC RURAL PRESS of the 4th inst. I remembered they said they had planted 5 or 6 inches deep. Is this a case in point?

P. ALLING.

Sacramento.

Not necessary; we doubt if depth affects the occurrence at all.

FORESTRY.

Forestry Education in California.

By E. J. WICKSON, University of California, in Water and Forest for October.

The University of California is ready and anxious to undertake instruction in forestry. There is frequent inquiry from students who wish to devote themselves to the work. The demand, too, for trained foresters is making itself heard. A school of forestry might be opened if \$10,000 were available for its support the first year and \$15,000 the second. This money would be returned to the State many fold through results that would accrue in a few years. The amount needed is indeed insignificant as compared with the enormous interests involved. I have suggested to a number of individuals who have made inquiry concerning suitable objects of beneficence the endowment of the study of forestry, but have always been met with the reply that this is something the State should provide. — BENJ. IDE WHEELER, President.

The three States whose western boundaries lie on the Pacific ocean have a total woodland area of nearly 150,000 square miles and standing merchantable timber to the amount of 620,000,000,000 feet, board measure—about one-third of all the standing timber of the United States.

One-fifth of the woodland of these three Pacific States is included in national reserves; one-eighth of it is covered by private and corporate ownership—consequently a little more than two-thirds has its future still determinable by national law and policy. Evidently such laws and policies should embody the most exact knowledge and the broadest enlightenment on forest interests and operations.

These three Pacific States cut during 1900 less than one-tenth of the lumber product of the United States. Three States on the Great Lakes cut more than a quarter of the national product and three other States in the southern pine belt cut another quarter. But it is a significant fact that though the Pacific States are cutting but a small fraction of the national lumber product, the volume is rapidly increasing. The

value of the lumber product of the three Pacific States has increased 60% during the last decade and 900% during the last two decades. Evidently, again, such rapid increase in production and consequent rate of deforestation should suggest the advisability of the most intelligent administration of timber lands by those who have secured title to them.

Fortunately, there has arisen upon the basis of a long term of European observation and experience, recently enriched by American research and experimentation, a series of demonstrations of fact, law and method which is entitled to the name of forestry science, and it has been amply proven that this science is not only capable of exposition and communication by educational methods, but that it can actuate arts and industries of economic soundness, practical feasibility and business success. Education in forestry has won for itself an honorable and enduring place among other branches of technical education and training. The possession of forestry science and the adoption of policies and practices which flow from it, are the foundation upon which forest conservation, forest use and forest extension all rest.

Forest sentiment and forest industry, widely apart now in motive and purpose, must find a reconciliation of their differences in forestry science, which will define *modus vivendi* for both. The pressing conditions which are suggested by the situation in which the forests of the Pacific States now stand, with reference to the national future and to the further development of the territory which they now enrich and adorn, can only be adequately provided for by the popularization of the principles of forestry science and the methods of forestry industry motivated thereby.

It is fortunate that there widely prevails on this coast a proper appreciation of the beneficent potentiality of forestry science in the solution of our local forest problems. The influence exerted by the Water and Forest Association, the Sierra club, the Forestry Section of the Los Angeles Academy of Sciences and other organizations, as well as by intelligent and devoted individuals, has created a wide sentiment in favor not alone of the poetic act of tree saving, but in favor of intelligent tree cutting. Owners of timber lands and managers of lumber associations are also awakened to the possibility of proceeding profitably without destroying the forest value of lands they cut over. Some of the recent purchases of great magnitude are to be administered with an eye to the future, and all are ready to be convinced of the practicability and profitability of methods prescribed by forestry science. There is then a wide demand for full knowledge of what forestry science is and what it can do for this richly forested coast—in short, for forestry education.

Proof of this interest is to be found in the public press and in the public assemblies of those following various professions and avocations. Proof also of a most definite character is found in the experience of those engaged in instruction in branches of botany and horticulture in the University. A number of young men are taking preliminary studies and are seeking opportunities for observation by acting as rangers on the forest reserves during University vacations. They desire to become professional foresters and will make their way to distant institutions where forestry is taught, unless similar opportunities for instruction are offered here. The number who can provide for education at the East and abroad is naturally limited and will not meet the demand which is arising. Again, it is not fitting that young men should go away from the country of the grandest forests to study forestry. The skilled teachers should be brought here, given an opportunity to adapt their science to local forest conditions, furnished with ample forest acres for their demonstrations and enabled to take their pupils to our own forests for most important lines of instruction in methods and practices.

HORTICULTURE.

Spraying for Walnut Bacteriosis.

By MR. E. G. WARE, before the Farmers' Institute at Fullerton.

I am asked to state the results of some experiments we have made this year in spraying walnuts for the bacteria disease that is destroying our nuts. We used Bordeaux mixture for one experiment and simply whitewash for another. The experiment is yet incomplete, so I can only state the results up to the present time. We took a 20-acre orchard for our experiment and sprayed two rows with the Bordeaux mixture and two with whitewash, leaving two unsprayed rows of trees between each set. We picked the nuts up as they fell, and placed them in barrels. Our first spraying was done the first of April, just as the buds were starting to put out. The second spraying took place the latter part of May, when the nuts were well developed. During the forepart of the season the Bordeaux-sprayed trees showed 50% less infected nuts than the unsprayed trees and the whitewash-sprayed trees 17% less. At the present time the Bordeaux still holds the record of 50% in its favor, while the whitewash shows no advantage over

the unsprayed trees; showing that in the forepart of the season the infections were not as bad as on the unsprayed trees, and merely took it longer to make the nuts drop.

The trees sprayed will have been set out eleven years next spring, and took fifteen gallons of spray to the tree the first spraying, and thirty gallons the second time when the trees were in full leaf. The Bordeaux mixture was made of ten pounds of bluestone and ten pounds of quicklime to 100 gallons of water. In making this spray it is better to have it just the right measure. Our spray tank held 300 gallons. It took six 50-gallon barrels to fill it. In three gunnysacks we put five pounds of bluestone each, and suspended these in three barrels of water. In the other three barrels we slacked five pounds of quicklime each. The lime water must be run through a very fine sieve. This sieve was made of a deep box which fitted into the barrel; over the bottom of the box we nailed two thicknesses of window screen. The suction hose of the tank pump was put into a barrel. The bluestone solution and the screened lime water were poured into the barrel in equal parts as the pump took it up. These solutions, going through the force pump, were well mixed.

The Bordeaux mixture, including the labor of preparing it, cost us 85 cents per 100 gallons. We paid a power spray outfit 1 cent per gallon to put it on the trees. The whole cost of spraying was nearly 28 cents per tree the second time.

Following the paper many questions were asked. Mr. Ware stated that in his opinion the disease was largely affected by climatic conditions and that it seemed to thrive most where the soil was light and sandy; he would, however, advise planting walnuts on this soil, as he thought the crop was profitable, even under these adverse conditions. Several opinions were given on the future of the walnut; some thought the future was not very bright, and the argument they advanced was that any crop that had to be constantly doctored could not be very valuable.

THE APIARY.

The Foul Brood Work in Fresno.

The Fresno Board of Supervisors last week, according to the Republican, spent most of a day in discussing the question of foul brood in the apiaries. The California Bee Keepers' Association has taken up the matter and there were present at the meeting President J. P. Johnson of Fresno, head of the Association, Bee Inspector Bowen and others interested in the production of honey. The matter took shape through the introduction of an ordinance drafted by the District Attorney after consulting with a committee of the bee men appointed at a meeting of the Association held in Selma last Monday.

NATIONAL BOARD INTERESTED.—Mr. Johnson explained to the Board that the National Bee Keepers' Association has taken steps to prevent the sale of honey from diseased hives throughout the United States and that the California association is in thorough sympathy with the national body. The danger to what has become an important industry in this county was pointed out if foul brood was allowed to remain unchecked. That it was a serious menace could be seen from the Bee Inspector's reports.

To correct the present condition of affairs the committee from the Association urged inspection of all importations, the use of hives with interchangeable frames, the destruction or removal of bees that have located in buildings and the making it unlawful to sell or offer for sale honey taken from infected colonies.

A STRINGENT ORDINANCE.—All these points are provided for in the ordinance in detail. No colonies of bees can be imported without being inspected for sixty days by the bee inspector to ascertain whether they are free from foul brood, pickel brood, black brood or other contagious disease. The Bee Inspector is to be paid by the owners of the colonies under inspection at the same rate as the county may pay him. It is the Bee Inspector's business, too, to remove or destroy all colonies of bees that have located in buildings as soon as he shall be notified. The ordinance was practically passed yesterday afternoon but will be formally passed this morning, as Messrs. Burleigh, Mitchell and Martin preferred to wait until Scott and Bullard could be present before taking final action.

WHAT FOUL BROOD IS.—Foul brood is said to be the most fatal of the diseases of bees and is highly contagious, the infection remaining in the hives, combs and honey long after the bees have been exterminated. It is generally described as being confined to the larvæ, which dies and putrefies after being sealed over by the bees and cannot be removed. It is attributed to the form of bacteria known as "micrococci," producing a fungus-like growth. John Hunter, the noted British authority on the keeping of bees, says that, when once fully developed, a total destruction of all hives and combs infected by foul brood seems to be the only way of eradicating it and that honey from a foul-brood hive will carry the germs of the disease to any bees which may consume it. This explains why the ordinance contains a provision prohibiting the sale of such honey.

Agricultural Review.

FRESNO.

THE ORANGE CROP.—Sanger Herald: It is thought that orange picking will begin the latter part of this month. W. B. Hazelton informs us that owing to the ravages of the grasshoppers in his orchard last spring he will have no oranges to ship this fall. This means a loss of at least \$1500 to Mr. Hazelton. Interviews with growers in the Orangedale district confirm the belief that the crop for the coming season will be at least 25% less than last season, but the fruit is much larger and finer. There is no scale whatever in the Kings river groves.

A MODEL TWENTY.—Enterprise: Geo. Drew has a twenty-acre tract east of town that is a model vineyard. This year his vineyard produced seventeen tons of raisins besides the second crop of grapes which he is hauling to the winery. The second crop will amount to thirty tons of grapes, which he sold for \$12 a ton, or \$360. This \$360 represents the leavings, so to speak, that in former years were allowed to go to waste. The seventeen tons of raisins are being delivered to the packing houses in Selma, and they are a fine lot, well cured and of excellent quality. At the Association prices, Mr. Drew will receive a check for considerable over \$1500 for his raisins, and this, with the \$360, will make the gross income from the place near \$2000.

KINGS.

TWENTY TONS TO THE ACRE.—Lemoore Leader: Mrs. R. Scally, from a little less than a quarter of an acre on her ranch, has harvested five tons of Mission grapes, for which she realized \$65. C. W. Williams is reported to have gathered five tons of grapes off a quarter of an acre on his ranch southwest of town. This is but a few of the many instances that may be cited.

A VALUABLE RAISIN VINEYARD.—Hanford Sentinel: A. F. Jewett states that he will soon be delivering about thirty tons of fine raisins here in town. He has one vineyard of five acres on the Cressy ranch that will yield twelve tons of raisins besides giving a good yield of second crop grapes for the winery. On his home place his vineyard will yield about a ton and a half to the acre of fine raisins, and a large second crop of good wine goods. Mr. Jewett regards the wineries as a fine auxiliary to the raisin grape industry. The demand for brandy made in this county from the raisin grapes will continue for some time, and this will insure safe and profitable business for the vineyardists for some years to come. There is an immense crop of raisins in this county this season, as is evidenced from the fact that the trays that have formerly been in use have all been employed, and thousands of paper trays are being used, besides many thousands of new wooden trays. Still, notwithstanding all this, the growers are putting large quantities of the first crop into the wineries at Hanford and Lemoore.

LOS ANGELES.

CHICKEN THIEVES.—Monrovia Messenger: Poultry in Monrovia is in brisk demand about 2 o'clock every morning, judging from the experience of a number of ranchers in the past week. Last Friday night 175 chickens mysteriously disappeared from the yards of W. P. Davis and G. M. Cooper. No traces of the thieves were found, but it is supposed that they were parties from Pasadena or Los Angeles. Monday morning over forty more were missing from the corral of E. C. Uhl. Shortly after midnight a number of people residing in that vicinity heard a team and wagon passing rapidly on the street, and the officers are of the opinion that one of the organized gangs of chicken thieves that are committing depredations all over the county has included Monrovia in its route.

MENDOCINO.

SALE OF HOP YARD AND RANCH.—Ukiah Dispatch-Democrat: Last week Marvin Ford sold his farm of 66½ acres, situated about 3 miles below Ukiah, to John Cunningham, the price paid being \$10,000. The land is first quality, and on it is a hop yard of twelve acres, which has no superior in the valley for yield and quality.

MERCED.

DAIRYING ON THE WEST SIDE.—Los Banos Enterprise: W. J. Jameson says that dairying is the best business he can get into. He has his ranch below the new canal, near town, over half in alfalfa. He is milking between eighty-five and ninety cows and his receipts at Los Banos Creamery last month were \$541, and this month \$553, making over \$6 per cow a month. He says he has got to get some more cows to eat his feed, because he had to ship 200 tons of baled alfalfa hay to this city this month, and he don't like to do that, as

feeding it to milk cows pays much better. He is keeping a few hundred head of hogs on the side that he keeps on alfalfa and skim milk. They bring him in a good profit.

PROFITABLE RETURNS FROM DAIRYING.—Sun: Butter and cream are at a better price now than for some time, as the coast pasture is poor. Our dairymen have arranged to have most of the cows fresh at this season, as we have plenty of green feed the year round, and can afford to have the stock dry in April and May when the price is lower. The dairies average from \$5 to \$10 per cow a month. Several have told us that with good fresh cows they are clearing \$2 per week. There will be many acres of alfalfa put in this season, and next year it is expected that the increase in the dairy products will be about 50%.

ORANGE.

SOLD ITS APRICOTS.—Santa Ana Blade: The Santa Ana Dried Fruit Association, through its board of directors, sold its dried apricots, about 300 tons, last Friday to the Inderridin Co. of Chicago. The price received was 5 cents per pound, delivered in sacks to the Spencer packing house in Orange. The Association set this price some time ago and notified local and Eastern firms, and the purchasing firm was the only one that was notified that would buy them at that figure. The members of the Association, as a rule, are satisfied with the sale, but there are some who believe that by holding out a little longer a higher price would have been obtained. The sale will amount to about \$20,000.

SACRAMENTO.

GOOD SOIL FOR GRAPES.—Journal: It is very evident that the soil at Galt and vicinity is particularly adapted to grape growing from the fact that the vineyard just west of the town of Galt, owned by Pete Denevi has this year produced over twenty tons per acre. These grapes are of the Black Prince variety and the berries very large, firm, well-shaped, of a beautiful color and a very fine flavor, containing an exceptionally large percentage of sugar, and all being in large bunches. The vines are all heavily laden and of uniform appearance over the entire vineyard. These grapes are grown entirely without irrigation. At the present price of grapes Mr. Denevi will realize not less than \$400 per acre on his vineyard. Twenty tons per acre, at first thought, seems like an enormous yield, which it is. One may think that this particular vineyard is just a chance, yet a visit to the vineyards that range from ten to fifteen years of age will prove that they yield from ten to twenty tons per acre, which, as a matter of course, depends largely on the care of the vineyard. Younger vines produce less in accordance their age.

SAN BERNARDINO.

SUGAR BEET HARVEST.—Chino Valley Champion: Work at the sugar factory is keeping up at a smooth, steady, satisfactory rate. An average of 840 to 850 tons are being sliced per day. On Wednesday 893 tons were sliced. The total sliced for the campaign to date is 56,523 tons. The estimate for the crop is yet above 90,000 tons, which would indicate that there are yet 34,000 tons to slice. The campaign will extend to the first of and probably a week into December. Chino beets are averaging about 15% sugar. Beets are being shipped in, however, with a very low sugar content. Some fields about Newland are giving thirty to thirty-six tons per acre.

FRUIT EXCHANGE.—Sun: At a meeting of the San Bernardino Fruit Exchange, held last week, Secretary Van Leuven reported the shipment during the past season of 450 carloads of oranges and lemons. These were all disposed of in the Eastern market, bringing \$426,433. This netted about \$1.25 per box, including 20,000 boxes of small seedlings. It is estimated that one-fourth of the fruit was shipped under refrigeration. The officers elected for the ensuing year number James Barnhill, president; S. H. Barrett, vice-president; Earl F. Van Leuven, secretary and manager.

SAN DIEGO.

THE RAISIN YIELD.—Union: The raisins are all picked. El Cajon will probably stem about 1000 tons. The stemming will commence next week. There is a big demand for early shipments. The sale of fifteen to twenty carloads for prompt shipment, at Association prices, has already been made. The raisin crop of El Cajon valley will be much larger than usual—that is, larger than for four or five years. There will be several carloads more to move out of the valley than they have shipped during any season since the dry years began.

SAN JOAQUIN.

HEAVY SHIPMENTS OF TOKAYS.—Lodi Herald: Table grape shipments from the

Lodi district still continue lively, though the Eastern market is not so strong as during the earlier part of the season. The best car for the week was shipped through the producers and sold in Boston at a gross of \$1273. Crates averaged from \$1 to \$1.50. Twenty-six cars have been shipped for the week ending to-day. This season has been crowned with more favorable weather than for years past, which is especially gratifying to the raisin growers. Rains, however, seldom do the damage to grapes that first estimates generally credit. For instance, last season there were three quite heavy showers preceding a shipment of Tokays on Nov. 9th that sold from \$3 to \$4 per crate. The shipments of Emperors will not commence until all the Tokays are out of the market. Tokays have the preference of Easterners over all other varieties, and to crowd Emperors onto the market at this time would mean unprofitable prices to the grower.

RETURNS FROM ALMONDS SOLD EAST.—Two cars of almonds—one to Philadelphia and one to Washington—were shipped out the past week from Lodi. The consignment consisted of twenty-eight tons, that paid the Lodi grower an average of 10 cents per pound.

GOOD FOR TWO-YEAR-OLD VINES.—Two years ago Mr. J. E. Cory, a mile east of town, planted ten acres from Zinfandel cuttings. This season he harvested and sold nearly nine tons at the rate of \$19 per ton. The vines were not irrigated.

GRAPES YIELD FIFTEEN TONS PER ACRE.—An exceptionally large yield of grapes, and one of the very largest uniform yields ever returned in this county, is being harvested by Robert Boyce at his home place west of Woodbridge. From two and one-half acres he will pick over thirty-seven and one-half tons of Black Princess, or an average of fifteen tons per acre. The test made of the first 100 vines averaged fifteen and one-fourth tons. The vines have never been irrigated, though Mr. Boyce says they have received much benefit from the seepage of an adjoining alfalfa field, which in a large measure accounts for the unusually heavy growth.

BIG BUNCH OF GRAPES.—Lodi Sentinel: A magnificent cluster of Tokay grapes was presented to the Sentinel office yesterday by Miss Mayme V. Langford. It weighed six pounds and was of handsome proportions. The berries were large, fine, firm and of delicious flavor, and were grown without irrigation.

SANTA CRUZ.

NEWTOWN PIPPINS BRING GOOD PRICES.—Watsonville Pajaronian: Two sales of Pajaro Newtowns were made in England last Friday, in each case four-tier stock selling at 13 shillings and five-tier stock at 10 shillings. Those prices will net back here about \$2.10 and \$1.40 per box for four and five-tier stock. The news of the sale caused a flurry in Newtowns, and holders don't show any inclination to sell at less than 90 cents. The sales reported were among first offerings and later sales may make a lower showing, though the quality of the Newtowns is superior this year, and the English market is showing high prices for all varieties of apples. The apple market has been booming in Great Britain. Even the Ben Davis has sold at the rate of 8 shillings per box on a day when 100 carloads of apples from America were offered for sale. The English market looks well, and with about all the available Newtown stock in Oregon and California the price for that favorite variety is apt to remain high. Nova Scotia and Virginia have an apple crop failure and the Hudson river Newtowns have been sold out—and those sections are the only active competitors to Pacific coast Newtowns across the Atlantic.

LIGHT APPLE YIELD.—There is going to be a scarcity of apples in Pajaro valley very early in the winter. Bellefleurs are about cleaned out, and there will be but few apples left in packing houses six weeks hence. The crop is the lightest for several years.

SONOMA.

A SPLENDID HOP CROP.—Santa Rosa Press-Democrat: T. Boone Miller was in town Thursday from his Russian river ranch. Mr. Miller considers himself one of the luckiest men in Sonoma county. Off his sixty-acre hop yard he obtained 707 bales of hops. He has likewise been fortunate in being offered a good figure for his crop.

FRUIT NOTES.—Santa Rosa Farmer: V. Durand sold twelve tons of Zinfandels to Fulton winery, the product of seven acres set out two years ago. The price was \$25 a ton plus the raise.—John Curtis marketed 2040 pounds of Gravensteins from an apple tree that was planted about forty-five years ago on his place at the junction of Mark West and Porter creeks.—D. Casassa will make up about 25,000 gallons of wine from his own grapes and some 15,000 gallons more from grapes

bought from outside parties. He has forty-five acres in vineyard on his well improved place in the Monroe district, about fifty acres on the Laguna ranch and thirty-five acres in young vines at Mount Olivet and will plant forty acres more there next spring.

SUTTER.

HEAVY OCTOBER SHIPMENTS.—Independent: Such heavy fruit shipments in October have never been known in the Sacramento and San Joaquin valleys as are being made this fall. The railroad company is taxed to its limit to meet the demand for cars. The scenes around our local depot show what may be doing at larger fruit centers. Both canned and dried fruit are being shipped at a lively rate from Yuba City, and it is reported that at all terminal points crews are working night and day to prevent a blockade.

WINDING UP SEASON'S WORK.—The work at the big Stabler orchard and drier west of town is practically finished for the season. There are some dried prunes yet on the trays; but as the trays are stacked, the rain, if it should come, can not hurt them. From 25 to 100 hands have been employed at this orchard since July 15th, and a material reduction in the county's population will be made after this and other large orchards have shut down.

SEEDLESS RAISINS BEING PURCHASED.—Yuba City Farmer: The raisin market opened strong this week and quite a number of sales are reported in this vicinity. The bleached Thompson Seedless sold from 8½ to 9 cents per pound and the sun-dried from 6½ to 7 cents. Muscatel raisins sold from 2½ to 3½ cents, according to quality. The general raisin crop of this county is from one-fourth to one-third short this season.

TEHAMA.

A BIG LOT OF HAY FOR ONE RANCH.—Red Bluff News: Ira Durand, who has been at work for several months baling hay on the D. S. Cone ranch, finished his contract Wednesday evening. His baling outfit put up in bales 960 tons of hay and another outfit baled 370 tons on the same ranch, making 1330 tons in all.

PRUNES OFF THE TREES.—The prune crop of Tehama county, which was this year unusually large, has been gathered from the trees, but there is yet considerable of the fruit out on the drying trays. During the latter end of the season it has required about two weeks time to dry the fruit, owing to the moisture in the night air.

TULARE.

LARGE SHIPMENTS OF HONEY.—Fifteen thousand pounds of honey were shipped from Visalia to Minneapolis last Wednesday. Fifty thousand more pounds were forwarded to Indianapolis Monday. The shipments of honey thus far this season from Visalia are about 200,000 pounds.

GOOD RETURNS FROM SULTANA VINES.—Alta Advocate: Mr. Frank Williams reports very respectable returns from five and one-half acres of Sultana vines. On the piece are 2300 vines and from these he has cured fourteen tons of raisins; the market fixes Sultanas at 5 cents a pound, and the price will give him \$1400 for his crop—nearly \$300 an acre.

YOLO.

A MOVE TO IRRIGATE.—Winters' Express: Messrs. S. G. Little and Charles Schirmer of Dixon were in Winters this week with a proposition that means much for the prosperity of southern Yolo and northern Solano counties. A scheme has long been mooted to construct an impounding dam in Putah creek 6 or 7 miles above Winters, and bring the waters in a canal to the orchards along the creek. The Dixon gentlemen have talked the matter over with land owners and business men in and about Winters, and the result is a subscription paper, the signers of which obligate themselves to pay certain amounts toward the expenses of a preliminary survey of a site for a dam in Putah creek, the route for a canal to the lands to be watered, and an estimate cost of carrying out the whole plan. About \$300 has already been subscribed and \$1000 is wanted.

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blenches from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blenish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

THE HOME CIRCLE.

A Mountain Belle.

No eye-bedazzling jewels deck
With sparkling rays of light
Her shapely hands or shapely neck—
They are not even white.
No modiste ever spans her fair
Young figure with the tape
For gaudy gown, nor tells her where
She could improve her shape.
She knows no language but her own,
She does not play nor sing,
Her actions lack the cultured tone
That years of study bring.
But, oh! the snowy bread she bakes,
So feathery and light!
The prize pot from the table rakes—
It's simply out of sight.

She is not brilliant in her talk,
The authors cannot quote;
Indeed, her words at times might rock
The cultured language boat.
She could not play a winning hand
At game of etiquette,
Might wreck the music of the band
In tony dancing set.
At fashionable party she
Might shock the pampered belles
And rouse the risibility
Of young man-monkey swells.
But that same rustic girl you'd hold
A treasure in your eyes
And worth her weight in virgin gold
If you could taste her pies!

She boasts not of her ancestry—
The meaning of that word
Is Greek or Jersey or Chinese
To this wild mountain bird.
She reads but poorly, writes far worse,
Her spelling is non est,
She never yet was known to nurse
Ambition in her breast.
Her mirror is a mountain brook.
Her ornaments the flowers.
Her houndoir is a rocky nook
Amid the sylvan howers.
But though this angel never trod
The civilization track,
Her slapjacks would tempt any god
To stop and eat a snack.

—Denver Post.

The Long Corridor.

When Edwin Dumble, son of old Richard Dumble, the millionaire brewer, fell in love with Henrietta Schouler, he knew that his father would oppose their marriage. He was a sophomore at Harvard, and Henrietta was studying music with Madame Frisonne in Boston. Mrs. Sears, the girl's chaperone and aunt, had warned the youth that the attachment must be broken. "Not that I or Mrs. Schouler object, for you are a nice boy, Edwin; but your father would rather see you dead than allied to the Schoulers by marriage. Why? I can't tell you—go and ask your father."

So Edwin, hurriedly packing a bag, rushed to his parent's big New York office, blurted out the story of his love for the pretty music student, and demanded the reason for the anticipated opposition. There was a quarter of an hour of storming—an incoherent damnation by the old man of everything connected with the Schoulers, and a sweeping characterization of the family that brought the young man to his feet almost screaming with rage—before an explanation was offered.

Then old Dumble said tersely:

"Old Schouler was my secretary once. Your mother was his sister; he trotted her around to me when he found out that I wanted a wife, and I married her. Before your mother's death Schouler married his second cousin, a woman of no family, an adventuress, who has been trying to get a hold on me ever since. This daughter has been shipped from St. Louis to Boston to study this fol-de-rol French singing, and—mark my words, boy—and to take you in! You've been taken in, too, easily enough."

"But," the old man's voice was raised in anger, "you must not see that creature again!"

"Creature!" cried young Dumble, starting up from his chair, "Sir, you must not say that again! Henrietta Schouler is the dearest, best girl on earth, and—" Edwin controlled himself with an effort.

"There is no use wasting words between us," said the father, speaking quietly now. "I can never consent to your marriage with that girl—I cannot consent to have you see her again. Mrs. Sears agrees with me. Now, will you give me your word as a gentleman—as my son—not to try to see her if you go back to Cambridge?"

"No," replied the son, "I love Henrietta better than my own life. I shall marry her, whatever you say or do." Then, for a time, the two stood face to face. The father turned from his gaze and began to pace the thickly carpeted floor of his big office, and presently the son was measuring the opposite limit of the room. And so, for half an hour. At last the old brewer stopped to face his son and say:

"I am quite determined that this marriage shall not take place. You would do well not to try to force it. I am prepared to go to any extent to prevent it. Now, go back to Cambridge with this thought before you always: I shall thwart every attempt you make to see the girl and will make it absolutely impossible for you to marry her. I hope you will recover from this madness."

The old man's tones were so even, so controlled, that the boy suspected a disposition to yield. He began to plead, saying that the girl was worthily, beautiful—everything desirable. But the thundercloud began to gather, and the incoherent pleading was stopped by a fierce oath.

"Go now, my son, before we quarrel further," said the old man quietly.

Young Edwin went back to Cambridge, leaving his father to an hour of fierce anger, then a night of active planning. When the rumble of the milk carts in the deserted streets announced the morning, the old man went home and to bed with a smile of confidence.

"It will be unusual, and a little hard to manage, but it won't hurt them!" he muttered before going to sleep.

Mrs. Sears, co-plotter with Mrs. Schouler, was entirely satisfied with the result of Edwin's visit to his father; the youth came back to her with a piteful pleading to be allowed to see Henrietta. But she had to deny him, she said. Her plan was to force an elopement, and the boy must be goaded to a very frenzy of desire. She privately determined to allow their next attempted meeting, which was due within two days. But when that time arrived she was thunderstruck to find that another plotter had entered the game; that Henrietta had been, in some inexplicable way, spirited away from her house half an hour before the young man made his back-yard entry to a deserted first-floor parlor.

As the youth opened the Searses' front door on the evening following his burglarious entry, the girl's aunt met him, wild-eyed and distraught.

"Oh! where have you taken Henrietta? where is the child?" Mrs. Sears was in an agony of fear.

"I?" queried the astonished boy. "I have not seen her for months. Oh! what has become of her—why did I not see her last night?" Mrs. Sears promptly fainted, and was given over to the care of her maid. Edwin could get nothing more from her. But he was determined to find Henrietta and marry her at once.

In a delirium of fear for the girl and rage at his own cursed stupidity, he started to walk back to his rooms in Cambridge. He never got to them. He disappeared from the college world as completely as though the earth had opened to swallow him.

* * * * *

On the top of Cardigan mountain in New Hampshire, a stern-faced old man directed the labors of twoscore of workmen. This horde had suddenly descended upon the peaceful hill village two days before, and straightway began the erection on the mountain top of a curiously divided, substantial structure, where it was announced a certain rich meteorological experimenter was to spend the winter and spring. It was a matter of snow formation and precipitation, it was said, in which Prof. Butler was interested.

Two days from the appearance of the workmen the last nail was driven, and

a train of wagons, loaded with a winter's supply of food and clothing, was started for the top. And that evening, when the darkness blotted out every feature of the landscape, the old man appeared with a clinging, frightened-looking girl on the mountain top. On the next evening, the darkness blotting everything from view as before, the old man brought up a younger man, to be, as he said, assistant to the professor. Then, with a corps of close-mouthed helpers, the experimenters shut themselves away from the world and were buried in the snow of the mountain top.

The mythical Prof. Butler's experiment station was constructed in a peculiar way. Two low-roofed, solidly anchored structures, identical in size and shape, were set on the very edge of a precipice that dropped sheer 500 feet. Three walls of each structure were windowless, unbroken save by heavy doors—the third, fronting the precipice, had abundant light and ventilation. And between the two structures, opening into each, was a long, covered corridor, lighted from the north, but through which, when it was completed, no man could pass.

Old Richard Dumble, who had assumed the role of the professor, took his son to the end of this strange corridor, and, pointing to the door that loomed at the other end, said:

"In the room at the end of this long passage is the foolish young girl you profess to love better than your own life. This door here, as you see, is open, and will be left unlocked. Yonder door is likewise freely passable. But between these doors is this passage, through the floor of which, when either of you tries to pass, you will fall upon the rocks 500 feet below. I have had marked upon this passage floor the point beyond which you may not go without breaking through. On the girl's side I have taken the same precaution.

"I shall keep you both up here until you are tired of this farce you call loving. I can trust my helpers. I have everything ready to keep you a year if necessary. Whenever you are ready to come to me and swear that you have banished all thought of Miss Schouler from your mind, I will have you both released, send you back to Harvard and make a man out of you.

"But if, in reality, you love one another better than life, you have only to rush together through this passage to a romantic death. Rather than to see you mated with that girl, I would come up to this mountain when the snow is gone in the spring and gather your bleached bones off the rocks. You won't do anything so foolish, I know, and so goodbye, my boy, until you send for me."

The old man went out hurriedly, choking a little over the last words. A ponderous lock grated as the father's form disappeared through the door, and the boy turned to gaze, fascinated, down that fatal corridor.

Presently, as he watched, Edwin saw the form of Henrietta Schouler at the opposite door, and he started forward impulsively in an ecstasy of welcome. When the girl saw her lover, she, too, strained forward a pace, and then recoiled with a cry of terror. That tell-tale mark which the old brewer had showed her stretched its impalpable barrier almost under her feet.

On his side, Edwin approached the white line with an unnatural caution. With his toe on its edge he felt the fragile floor quake and sway. He crept back to the doorway, a blind animal terror clutching him, and the sweat beading on his forehead. He stood for a moment gazing at the face framed, beside his father's, in that other prison door. He stretched his arms towards the girl, and cried out to his father for pity. The old man finished his talk to the girl, and went out, paying no more heed to the boy's cries than to the wind that rattled the window frames.

Then, for the young people, began the most curious imprisonment that a prosaic twentieth-century chronicle has ever recorded. In an age that fostered intrigue and inquisition, old Dumble would have been a master plotter. Now he was a shrewd, rich old autocrat with a purpose in view

which he was determined to accomplish as quickly as possible.

Thus reasoned the old man: "Once in a thousand cases, perhaps a man and a woman will love one another better than life. In this practical age, though, the proportion may be cut down to one in ten thousand. What youth mistakes for the divine passion, lasting through and beyond the span of life, is the impatience of young years, the desire of a child for the moon, the changing whim of an eager age. Fan this quick flame to white heat and it will soon die to cold ashes. Now, if Edward is of the nine thousand nine hundred and ninety-nine, he will soon wear out this love in daily sight of his desired one, and come back to me a wise boy, and no law will be broken—the girl will go unharmed. If he is the one in ten thousand, and the girl is the one in five thousand (for that sex is certainly more impulsive), why, then—but, pshaw! he isn't."

The brewer knew humanity passing well and watched his experiment with confidence. Old Schouler was wild at the disappearance of his daughter; the little world in which the Schoulers and Mrs. Sears moved was in a turmoil; but—old Richard Dumble's world had a wider orbit! No suspicion attached to the old man, and the world, or that part of it that fretted over the young people's affairs, had to fall back upon the theory of an elopement.

Deserted by the world, ministered to by grim, close-mouthed servants, supplied with the comforts and amusements of normal young people—Edwin with books and gymnasium apparatus, Henrietta with music, the latest novel, embroidery—the two prisoners passed their days in maddening proximity. The corridor was far too long to permit the tender whisperings that lovers commonly use; indeed, there was always the howling wind as a rival in any exchange of vows. But there was the language of signs, and eternal trust that could be expressed in a clutching at vacancy.

Books mocked the young man—what did they say but love that was always rewarded in the end? Music, such as she knew, spoke to Henrietta of love that blossomed in a free young breast—and here the blasts that whirled up that precipice face turned her plaintive notes to a thin wailing. The grim faces of the servants, passing in and out, silently, except for the jangling of the big keys, oppressed the spirits of both. A sort of desperate recklessness possessed the lovers—they paced their rooms, in and out of those corridor doors, up the line beyond which it were death to pass; and a great despair came upon them.

Winter gave way at last to spring, and even on that bare mountain top, where the world stretched away from their view a thousand feet below, the new balm came to renew the lovers' passion. Not once had Edwin taken pen to write his defeat; not once had Henrietta failed to gain courage from a fresh sight of the man who loved her. Sometimes, in a lull of the everlasting mountain storm, they had called to one another to be brave and faithful.

The earth released from the grip of the snow, and young leaves came out to clothe the trees on the beautiful New Hampshire hills. At last the little lakes that dotted a broad, green valley shone up to the prisoners like bright jewels on a warm full bosom. Life, throbbing, new, eternal, woke the flame of love to white heat. The decrees of man seemed impotent, unreal. Heaven-sent love, the cry of man to maid, and of the spring to young hearts, swept the lovers' reason and fear to the winds. A great cry, like a challenge to God, rang out from the boy's lips.

"My love, do you fear death?" And the answer, keyed to an exultant pitch, rang back:

"Not with you, my sweetheart!"

"Ah! then come." With the words, Edwin sprang forward to meet the oncoming rush of the mad girl. One step over the white dead line, and the floor was creaking like thin ice. Two steps, and it was swaying like a showman's net. With the touch of hand to hand, the frail foundation splintered and fell with a crash in which were mingled the terrified scream of the girl and the

exultant cry of the infatuated lover.

* * * * *

"Sir, my master bade me give you this paper whenever you appeared here." Dazed, uncomprehending, Edwin Dumble glanced up from a tangle of broken beams to see a close-buttoned, deferential servant at his side, extending to him a square folded paper. His eyes sought wildly for Henrietta. She was lying near him in a panic of wonder.

The youth opened the paper and read:

If you are the one in ten thousand, and risk death for the girl, you deserve her. Go and be married, and come to me at once. I hope you will not be hurt by the splinters.

RICHARD DUMBLE.

"Splinters!" What kind of an after-dream was this. Then young Dumble looked up, to see the gaping hole in the corridor floor hardly six feet above the sawdust-covered ground on which he sat!—John K. Oskiem.

Cold in the Head.

So-called "colds" are acute infection of the nasal mucous membrane produced by the action of the germs constantly present. If the normal vitality or resistance is impaired, as by a lowering of temperature below normal, the germs gain a foothold and find a suitable soil for growth. In the process of growth they produce certain poisons or toxins, which are absorbed into the system, and produce the symptoms of headache and fever. The irritation of the toxins, locally, causes an inflammation of the mucous membrane, characterized by the swelling and discharge of mucus and pus.

Accordingly, the indications for treatment for an acute infection of the mucous membrane are: (1) Cleansing with mild antiseptics with a small glass douche; (2) relief of the headache and fever by appropriate internal remedies. Cleansing may be effected with a solution of alkaline antiseptic tablets—one tablet dissolved in four ounces (half a tumbler full) of warm water. Use in a small glass douche. Cleanse the nose every hour or two. For the relief of the headache and fever, three grain doses of phenacetin every three hours until relieved. Don't use quinine.

Every person who is subject to colds should go to a competent nose and throat specialist and have a thorough examination. There will very likely be found a constitutional disturbance of some kind or a chronic affection of the nose and throat which can only be intelligently treated by a physician. The only thing the writer advises the sufferer from chronic nasal disease to do on his own responsibility, is to keep the nose and throat cleansed daily. The nose and throat deserve even more attention in this way, as a matter of simple hygiene, than do the teeth.—Popular Science Monthly.

Another Octogenarian.

They were neither of them brilliant scholars, but they liked to move with the times as regards their knowledge of current events, so the daily newspaper was regularly delivered at their humble domicile, and it was Jenny's duty to read out during breakfast time all the most interesting items of the day. One morning, after wading through the latest intelligence from the front, she turned to another page of the paper, and said, "Herbie, it says here that another octogenarian's dead. What's an octogenarian?"

"Well, I don't quite know what they are, but they must be very sickly creatures. You never hear of them but they're dying."—London Answer.

"And what is to be the subject of our lecture to-morrow night, Professor?" "Well, my dear young woman, I can hardly hope it will have much interest for you. I shall lecture on 'Sun Spots.'" "Oh, but that's of the greatest interest to me. I shall certainly come. You've no idea how I suffer from freckles."

DOMESTIC ECONOMY.

Cider and Vinegar.

TO THE EDITOR:—Will you publish a recipe for making cider that will keep, also for making vinegar?—CONSTANT READER, Calistoga.

An experienced writer for the Orange Judd Farmer says: For keeping cider sweet, heat to a temperature of 165°, keeping it at that stage for two hours and skimming occasionally. In this way the cider is pasteurized and if stored in fruit jars, bottles or kegs, will keep sweet indefinitely. The matter of adding antiseptic compounds, such as salicylic acid, is not to be advised, because of its injurious effect on health.

A cheap grade of vinegar may be made by putting the apple pomace into a tank of some kind, pressing it down firmly, then adding enough water to just cover it or keep it damp. The pomace should be allowed to stand for three or four days, when it can be removed and again run through the cider press. The juice extracted can be added to the original cider. The mixture will then contain about 70% apple juice and 30% water. It will make a very good grade of cheap cider vinegar.

To make vinegar in a small way, the cider should be extracted in September or October and placed in a barrel on the south side of some building, where there is some warmth and light. It can remain in the open air indefinitely if no freezing temperatures arrive. In wintry climates it should be removed to the cellar. The bung hole should be left open at all times, so that air can get at it. This will aid very much in the process of vinegar making. Considerable time can be gained by drawing off several gallons of the juice at intervals and allowing it to remain in a warm place for two or three days, then pouring back into the barrel. Some people add a quart or so of molasses. This will not hurt the quality of the vinegar, but will hasten the formation of acetic acid.

Hints to Housekeepers.

If the white woolen shawl has become soiled, dip it into a bath of cornmeal and rub it thoroughly.

Two or three tablespoonfuls of strong but delicately flavored tea are said to enhance the delights of apple pie.

One-half cupful of sweet cream is added by certain housewives to the baked beans pot about a half hour before it is taken from the oven.

To absorb the noxious effluvia, etc., in a sick room, place two or three good-sized onions, cut in halves, on a plate on the floor. Change them every three hours.

Persons suffering from the inflammation produced by poison ivy should take care to protect the affected parts from the bites of mosquitoes, spiders or other insects. The double poison that might be injected sometimes causes serious trouble.

Chili pepper sauce is always delicious. Take twenty ripe tomatoes, six green peppers and four white onions chopped fine, two cups of best wine or cider vinegar, one cup of sugar, two tablespoonfuls of salt, two even teaspoonfuls of ground mace, two teaspoonfuls of nutmeg, two teaspoonfuls of cloves, one teaspoonful of celery seed. Boil an hour and bottle while hot. Very nice to serve with baked beans.

On a specially warm day a well-prepared ragout of young vegetables may easily take the place of meat. Clean and scrape enough new carrots to fill a pint measure; take the same quantity of potatoes and young white turnips, cutting them into pieces the size of the carrots, one-half of a cupful of leeks cut fine. Cook the carrots in boiling salted water for half an hour, the turnips, potatoes and leeks for ten minutes. Drain all, and in a frying pan put two tablespoonfuls of butter or rendered suet and two tablespoonfuls of flour. Mix over the fire, add one pint of beef stock or water and stir until it thickens. Add one level tablespoonful of sugar, one teaspoonful of salt and

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one-quarter of a teaspoonful of white pepper. Add the vegetables, cover, and simmer for thirty minutes. Add one tablespoonful of chopped parsley and serve.

Milk or cream used for baking is best when it sours quickly and does not separate, but remains thick and smooth. The usual measurement to use in every recipe where lightness is desired is one level teaspoonful of soda to two cups of sour milk or one cup of molasses. Sometimes the milk is sour, but not loppered; then use it in gingerbread or brown bread, where there is molasses enough to complete the acidity, or let it stand for a few hours in a warm place to lopper. The more acid the milk is, the more soda it will require. Never use milk which has turned bitter or mouldy.

Domestic Hints.

MINCED OYSTERS.—Chop twelve oysters very fine. Add two beaten yolks of eggs, a cup of breadcrumbs, salt and pepper. Drop this batter in hot fat by the tablespoon, and fry a delicate brown. Remove to a piece of brown paper to drain off the grease. Serve hot.

SHRIMP OMELETTE.—Prepare the shrimps and stew in a little butter for five minutes. Make an omelette with six or eight eggs and one-half a cup of cream; season with one spoonful of finely copped parsley, salt and pepper. When done lay the shrimps on and fold over. Garnish with parsley.

CURRENT JELLY FRITTERS AND COLD DUCK.—Cut slices of bread and spread thickly with currant jelly; put two together, press gently, but do not let the jelly squeeze out; cut them with a fancy cutter; dip in batter and fry quickly in hot lard. Pile slices of cold duck neatly in the center of a platter and lay the fritters around in a circle.

EGG OMELETTE.—Place the whites and yolks of eggs in separate dishes. Beat the yolks very light, and for each yolk add one teaspoon cream. Turn yolks into hot buttered pans. Beat whites to stiff froth and spread on the top of yolks. Set it back from the hottest part of the stove and let it stand three minutes. Cut in halves and fold together.

BAKED MUSHROOMS.—Peel and remove the stems from some large, perfect, cup-shaped mushrooms. Lay them in a baking pan, close together, without crowding, so that they will remain upright. Fill the cups with chopped mushrooms seasoned with pepper and salt and mixed with melted butter. Take up when done on slices of soft, thin, buttered toast, and serve in this way, or pour a little cream over them when serving.

CAPON SALAD.—Have some cold, roasted capon cut into small, thin small slices. Lay in a dish and season with salt, pepper, oil and vinegar. Over the spices put sliced cucumbers and radishes; dress these with oil, vinegar, pepper and salt. Put in another layer of the capon, and so on till the dish is full. Heap it a bit in the center, skim it over lightly with mayonnaise, dot the mayonnaise with sliced truffles and send to table.

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24 "	" 15.00 "
30 "	" 17.50 "

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S. F. Market Report.

Produce Market.

SAN FRANCISCO, Oct. 22, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	69 3/4 @ 70 1/4	72 @ 73
Thursday.....	71 1/4 @ 72	72 3/4 @ 73 3/4
Friday.....	71 1/4 @ 72 3/4	73 3/4 @ 74 1/4
Saturday.....	72 @ 72 3/4	73 3/4 @ 74 1/4
Monday.....	72 3/4 @ 73 1/4	75 3/4 @ 76 1/4
Tuesday.....	72 3/4 @ 73 1/4	73 3/4 @ 74 1/4

CHICAGO OAT FUTURES.

Prices of futures on No. 2 White oats per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday.....	31 @ 31 1/4	31 3/4 @ 32 1/4
Thursday.....	31 1/4 @ 31 3/4	32 1/4 @ 32 3/4
Friday.....	31 3/4 @ 32 1/4	32 3/4 @ 33 1/4
Saturday.....	31 3/4 @ 32 1/4	32 3/4 @ 33 1/4
Monday.....	31 3/4 @ 32 1/4	32 3/4 @ 33 1/4
Tuesday.....	31 3/4 @ 32 1/4	32 3/4 @ 33 1/4

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 23 3/4 @ 1 25	\$1 26 3/4 @ 1 27 1/4
Friday.....	1 24 1/4 @ 1 26	1 27 @ 1 28 1/4
Saturday.....	1 26 1/4 @ 1 27 1/4	1 28 1/4 @ 1 29 1/4
Monday.....	1 29 1/4 @ 1 27	1 31 @ 1 28 3/4
Tuesday.....	1 26 @ 1 27	1 27 1/4 @ 1 29 1/4
Wednesday.....	1 26 1/4 @ 1 28 1/4	1 28 3/4 @ 1 29 1/4

WHEAT.

There has been a strong market for this cereal during most of the week under review, with prices at a little higher range than have been current for a long time in this center. Futures moved up over 2c during the three days ended Saturday last. Futures opened higher on Monday, but the advance was not maintained. For spot wheat in the open market asking figures during the same time were advanced fully 50c per ton, making No. 1 shipping quotable at \$1.27 1/2 and choice milling at \$1.30 @ 1.32 1/2. These figures are over 25 per cent above the best prices obtainable a year ago, and over 30 per cent in advance of values current at corresponding date two years ago. At the advanced rates there was not much wheat offered for sale, either here or at interior points in this State. The supply of wheat in the interior may be much lighter than has been generally anticipated, although there should be still considerable surplus stock, as exports of this cereal from San Francisco to date do not aggregate 85,000 tons. The improvement in wheat values for several weeks past has been much more pronounced here than on the Atlantic side, and the difference has been still greater in favor of the local market when compared with values quoted for wheat in Europe. Most of the recent improvement in local prices for wheat has been brought about through weakness in ocean freight rates. Ships are not now wanted at the low figure of 20 shillings for the usual European voyage. Some are being loaded at a big loss to charterers. Others without charters are being tied up in the "boneyard," awaiting better times for their owners. The market yesterday and to-day was more quiet than for several days preceding, but closed against buyers.

California Milling.....	1 28 3/4 @ 1 32 3/4
Cal. No. 1 shipping, alongside.....	1 26 1/4 @ 1 27 1/4
Oregon Valley.....	— @ —
Washington Blue Stem.....	— @ —
Washington Club.....	— @ —
Off qualities wheat.....	1 22 1/4 @ 1 25

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1901-02.	1902-03.
Liv. quotations.....	58 9/4 @ 58 10d	65 5d @ 65 5 1/2 d
Freight rates.....	33 3/4 @ 34 1/2	— @ 35 1/2
Local market.....	95 @ 97 1/4	1 26 1/4 @ 1 28 3/4

The prices above are for spot lots of standard No. 1 California in Liverpool and for good to choice shipping in this city.

PRICES OF FUTURES.

On Merchants Exchange prices of futures for No. 1 White wheat per cental for the week were as follows for the options named:

December, 1902, delivery, \$1.23 3/4 @ 1.29 1/4.
May, 1903, delivery, \$1.26 3/4 @ 1.31.
Wednesday, at the forenoon session of Exchange, December, 1902, wheat sold at \$1.26 3/4 @ 1.26 3/4; May, 1903, \$1.28 3/4 @ 1.28 3/4.

FLOUR.

The market is showing more firmness, in consequence of the recent sharp advance in wheat values within the past fortnight, but flour is still selling at quite low figures, as compared with prices lately current for wheat. There is not much pressure to realize, however, and should there be no pronounced breaks in wheat values in the near future, higher prices for flour may be looked for.

Superfine, lower grades.....	2 40 @ 2 65
Superfine, good to choice.....	2 75 @ 3 00
Country grades, extras.....	3 40 @ 3 60
Choice and extra choice.....	3 60 @ 3 90
Fancy brands, Johning.....	3 90 @ 4 00
Oregon, Bakers' extra.....	3 00 @ 3 30
Washington, Bakers' extra.....	3 00 @ 3 50

BARLEY.

The strength developed in this market the past week has exceeded the expectations or predictions early in the season of the most sanguine prophets. From Thursday to Saturday last, inclusive, prices for future deliveries of No. 1 feed moved up about \$1 per ton, and correspondingly higher figures were asked in the open market for all descriptions of feed. Futures were lower Monday, but spot market showed no perceptible decline. Business was largely on local account and was principally in barley wanted for feed purposes or for delivery on contracts. Brewing grades of the ordinary variety of barley could not be placed for shipment at as good figures as were obtainable on local account for feed barley. Stocks are small, both here and in the interior. Chevalier is in such light supply as to be hardly quotable. The market for both spot barley and futures was quiet yesterday and to-day, but spot offerings were light and were firmly held.

Feed, No. 1 to choice.....	1 20 @ 1 22 1/4
Feed, fair to good.....	1 17 1/4 @ 1 20
Brewing, No. 1 to choice new.....	1 20 @ 1 25
Chevalier, No. 1 to choice.....	1 37 1/4 @ 1 52 1/4
Chevalier, common to fair.....	1 20 @ 1 35

OATS.

This cereal has been receiving more attention than at any previous date for several months past, and it is surprising that buyers did not sooner take hold more freely, as oats have been for months the cheapest cereal on the market, and are still the cheapest on the list, all things considered, although the market is higher throughout than at any previous date this season.

White Oats, fancy feed.....	1 25 @ 1 30
White, good to choice.....	1 20 @ 1 25
White, poor to fair.....	1 15 @ 1 17 1/4
Gray, common to choice.....	1 17 1/4 @ 1 25
Milling.....	1 22 1/4 @ 1 27 1/4
Surprise, good to choice.....	1 25 @ 1 32 1/4
Black Russian.....	1 10 @ 1 27 1/4
Red.....	1 10 @ 1 27 1/4

CORN.

Stocks are too small to admit of any extensive trading. Quotations continue at a high range and are necessarily based on prices realized in a limited way on light offering from second hands.

Large White, good to choice.....	— @ —
Large Yellow.....	1 47 1/4 @ 1 48 1/4
Small Yellow.....	1 50 @ —

RYE.

Market is moderately firm, under light offerings. Inquiry at current rates is not brisk, however, and is almost wholly on local account.

Good to choice.....	1 07 1/4 @ 1 10
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BUCKWHEAT.

There are no evidences of any wholesale trading. Stocks in the hands of millers and dealers are of light volume. Owing to the prevailing inactivity, values are not clearly defined.

Good to choice.....	1 55 @ 1 70
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BEANS.

Market remains unfavorable to the buying interest, but there is not much activity, prices being in the main at too high a range to warrant Eastern dealers taking hold freely, although the Eastern markets are firm, with the crop on the Atlantic side light and of generally poor quality. Stocks in the East are of small proportions. New York is now getting some beans from Europe and Canada, but there is no certainty that the East will be able to import very heavily at better than or at as good figures as purchases can be effected in this State. Shipments now being made outward from here are mostly of beans secured before prices touched present comparatively high levels.

Pea, fair to good, 100 lbs.....	3 50 @ 3 75
Small White, good to choice.....	3 20 @ 3 40
Lady Washington.....	3 00 @ 3 25
Pinks.....	2 70 @ 2 85
Bayos, good to choice.....	2 90 @ 3 10
Reds.....	2 50 @ 2 75
Red Kidney.....	4 00 @ 4 50
Limas, good to choice.....	4 25 @ 4 50
Black-eye Beans.....	4 00 @ 4 25
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

There is no special activity in the local market in either Green or Niles Peas. The latter continue in lightest stock. There have been some recent purchases reported in Humboldt county at prices relatively close to figures current here.

Green Peas, California.....	1 50 @ —
Niles Peas.....	1 75 @ —

WOOL.

Offerings in the local market are of slim proportions and are steadily on the de-

crease. Spring wool is practically out of stock, and Fall clip bids fair to be all cleaned up long before the opening of the coming Spring season. Market is decidedly firm throughout, some sales being effected above quotations. Interest this week centers in the pool sales in Mendocino county, which opened yesterday.

SPRING.

Humboldt and Mendocino.....	18 @ 20
Northern Sacramento Valley, free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Humboldt and Mendocino.....	13 @ 14
Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 11

HOPS.

The market shows a firm tone, but there is no evidence of much doing in this center. Dealers are quoted as wanting to purchase choice at 24c, with growers asking 25c and more for desirable marks. Tolerably free shipments are being made overland to the East, principally of hops in the hands of dealers. The last steamer for Australia took nearly 36,000 pounds, or close to 200 bales. The following is from a New York review: "As the season advances, brewers are showing more interest, and pretty good business is now in progress. Dealers are buying in the interior and turning stock quickly, and this is giving the market a very firm tone—in fact, some sales have been made during the week at better prices than had ruled previously. There is a little inquiry from exporters and this is giving added strength to the position. In the interior of this State 30c has become a well-established price for best growths, but the lower qualities, small growths, etc., are selling at 27 @ 29c. Beside the buying by dealers, an English exporter is filling orders at the top figure. German markets hold very firm, but there is less activity at the extreme rates now asked. London cables indicate no material change."

California, good to choice new.....	22 @ 26
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HAY AND STRAW.

Market for hay, as regards quotable values and general tone, has remained much the same as previously noted. Arrivals are showing some decrease, and with some movement outward, mainly to the Hawaiian Islands, immediate offerings are cleaning up fairly well at prevailing values. That the market will incline any more in favor of buyers as the season advances is not considered probable, and some of the heaviest holders are looking for materially better prices during the Winter and Spring months. Straw continues in light supply and is commanding good figures.

Wheat, good to choice.....	10 50 @ 13 50
Wheat and Oat.....	10 00 @ 12 50
Oat, good to choice.....	7 50 @ 11 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	8 00 @ 11 50
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 50
Straw, 3/4 bale.....	40 @ 55

MILLSTUFFS.

Prices for mill stuff of every sort remain at a high range, with receipts and offerings of much the same limited proportions as for months past. Rolled Barley is higher and is being offered sparingly. Milled Corn is firmly held, with supplies light.

Bran, 3/4 ton.....	21 50 @ 22 50
Middlings.....	24 00 @ 25 00
Shorts, Oregon.....	22 00 @ 23 00
Barley, Rolled.....	24 50 @ 25 50
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

Not much has been yet done in Alfalfa, nor is there apt to be any great activity very soon, unless prices become more reasonable. Dealers object to taking hold freely of the Utah product at \$8.50 per cental there, \$9.20 laid down here in carload lots, deeming the price too high to stock up against the future. Some California Alfalfa has changed hands at 8 @ 8 1/2 c. per pound for fairly good to choice, and for some of superior quality 8 1/2 c. is asked from first hands. Canary Seed is scarce and high. Market for Mustard is firm at the rates quoted. Flax is steady.

	Per ctt.
Alfalfa, Cal.....	8 00 @ 8 50
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	3 30 @ 3 60
Mustard, Trieste.....	3 20 @ 3 50

	Per lb.
Canary.....	4 1/4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/2 @ 4

HIDES, PELTS AND TALLOW.

The local market for Hides and Pelts is very quiet and is lacking in firmness, although in the matter of quotable values there are no special changes to record. Tallow is not lacking for custom, being in good request for shipment at practically unchanged figures.

HONEY.

The same firm tone previously noted is being experienced, with stocks and offerings light, especially of high-grade Extracted. There is no undue selling pressure on honey of any description.

Extracted, White Liquid.....	5 1/2 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/2
Extracted, Amber.....	5 @ 5 1/4
Extracted, Dark Amber.....	3 1/2 @ 4
White Comb, 1 lb frames.....	12 @ 12 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/4

BEESWAX.

Supplies are light and market is firm, with no probability of values touching lower levels the current season.

Good to choice, light, 3/4 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

Current values for Beef are being well maintained, with no excessive offerings and very fair demand. Market for Mutton is without quotable change, but for good to choice there is no lack of inquiry at full current figures. Lamb is not in heavy receipt, but is in the main too large to command materially better prices than Mutton. Veal is in very fair supply and for other than choice medium to large size the market lacks firmness. Hogs are in only moderate receipt and such as are in prime to choice condition are selling readily at prevailing values, heavy bringing relatively the best figures.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 3/4 lb.....	7 @ —
Beef, second quality.....	6 1/4 @ —
Beef, third quality.....	6 @ —
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	— @ —
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 3/4 lb.....	7 @ 8 1/4
Veal, large, 3/4 lb.....	6 1/4 @ 8
Lamb, spring, 3/4 lb.....	9 @ 9 1/4

POULTRY.

There were fair receipts of both California and Eastern. The demand for most kinds showed improvement over that of preceding week. Good to choice fowls sold as a rule to tolerably fair advantage, some especially desirable as to size and condition commanding above quotable rates. Turkeys proved an exception and sold at a decline, Eastern being in larger supply than the demand warranted. At the close, however, the Turkey market recovered, and all poultry in prime to choice condition was in good request.

Turkeys, alive, choice young.....	17 @ 19
Turkeys, alive, Hens, 3/4 lb.....	16 @ 17
Turkeys, alive, Gohliers, 3/4 lb.....	16 @ 17
Hens, California, 3/4 dozen.....	5 00 @ 5 00
Roosters, old.....	5 00 @ 5 50
Roosters, young (full-grown).....	5 00 @ 6 00
Fryers.....	4 00 @ 4 50
Broilers, large.....	4 00 @ 4 50
Broilers, small to medium.....	3 25 @ 3 75
Ducks, old, 3/4 dozen.....	2 50 @ 4 00
Ducks, young, 3/4 dozen.....	3 00 @ 3 50
Geese, 3/4 pair.....	1 50 @ 1 75
Goslings, 3/4 pair.....	1 50 @ 1 75
Pigeons, old, 3/4 dozen.....	1 25 @ 1 50
Pigeons, young.....	1 75 @ 2 00

BUTTER.

The market is liberally stocked for this time of year with fresh creamery, and tendency of values for same is in favor of buyers, especially for other than favorite marks going to special custom. Medium grades are in fair request at moderate figures, owing to reduced offerings of low priced cold storage butter. Cheap or pasty butter is not plentiful and sells readily.

Creamery, extras, 3/4 lb.....	28 @ 29
Creamery, firsts.....	26 @ 27
Dairy, select.....	25 @ 26
Dairy, firsts.....	24 @ 25
Dairy seconds.....	21 @ 23
Flrkin, good to choice.....	22 @ 23 1/4
Mixed store.....	18 @ 20
Pickled Roll.....	22 @ 24

CHEESE.

Market is quite firm, with prospects of so continuing for some weeks to come, particularly for choice new. Stocks of all descriptions of domestic are light. Eastern cheese is being steadily held here and is firm at primary points.

California, fancy flat, new.....	13 @ —
California, good to choice.....	12 @ 12 1/4
California, "Young Americas".....	12 1/4 @ 13 1/4

EGGS.

There are no heavy receipts of domestic fresh, but there are more coming forward than can be accommodated with custom at extreme figures lately current. Trade is heavily on cold storage and Eastern eggs, which are being offered at comparatively low figures. Handlers of cold-storage supplies are desirous of reducing holdings as rapidly as possible, not caring to carry any stock beyond the mid-winter holidays.

California, select, large, white and fresh. 42 1/2 @ 44
California, select, irregular color & size. 35 @ 40
California, good to choice store. 27 1/2 @ 32 1/2

VEGETABLES.

The market has been quiet most of the week, with the display rather light, especially of summer varieties. Peas and Beans of choice to select quality brought good prices. Tomatoes were in increased receipt, but at the easier figures current were taken freely by canners. Onions continued in good supply, as compared with the demand, and prices were without quotable improvement.

Beans, Lima, # lb. 2 @ 3
Beans, String, # lb. 2 @ 3 1/2
Cabbage, choice garden, # 100 lbs. 50 @ 60
Cucumbers, # large box. 60 @ 80
Egg Plant, # large box. 60 @ 80
Garlic, # lb. 2 @ 2 1/2
Onions, Yellow Danver, # cental. 40 @ 55
Okra, Green, # box. 40 @ 60
Peas, Sweet garden, # lb. 2 1/2 @ 4
Peppers, Green Chile, # box. 50 @ 75
Peppers, Bell, # box. 50 @ 75
Summer Squash, Bay, # large box. 75 @ 1 00
Tomatoes, # large box. 30 @ 50

POTATOES.

Arrivals of potatoes were of quite moderate proportions, but with little other than local demand, offerings proved ample for current requirements, especially of other than most select qualities. Inquiry was mainly for high-grade Burbanks, and these in a limited way brought tolerably firm figures. Oregon has begun to forward, but not in sufficient quantity to establish wholesale values. Sweets sold to a little better advantage than preceding week, but market could not be termed particularly firm.

Burbanks, Salinas, # cental. 90 @ 1 20
River Burbanks, good to select, # cental. 35 @ 60
River Reds. 65 @ 90
Sweet Potatoes, # cental. 1 20 @ 1 25

The Fruit Market.

FRESH FRUITS.

Most of the Summer varieties have disappeared from market, leaving the display rather limited, but at the same time very fair, considering the time of year. Apples are prominent in point of quantity of offerings, but the proportion of choice to select in present spot stocks is decidedly light. For high-grade Apples the market is fully as firm as previously noted. Four-tier Bellefleurs in first-class condition are quotable up to \$1 25 per box. Fancy Oregon Spitzenburg were not obtainable under \$1.50 per box, and in a small way were held at an advance on this figure. Bartlett Pears continued to be offered, but only in limited quantity, and were mainly from Oregon and the northern sections of this State. Choice Bartlett met with a tolerably firm market. Winter Nels and other late Pears are not yet receiving much attention, but are expected to be more in favor with consumers at an early day. Peaches were in fair supply, choice selling tolerably well, but such as showed poor keeping quality were difficult to place at low figures. The Grape market was rather heavily stocked with both table and wine varieties, but a large proportion showed poor quality, and for this sort the market lacked firmness. In table kinds, aside from Seedless, which were scarce and high, Cornichon, Isabella and Queen grapes received the most attention and commanded best figures. Wine Grapes in prime to choice order and showing straight varieties were favored with a moderately firm market, but mixed lots of common quality were not much sought after, and offerings were mostly of latter description. Melons were in reduced supply, but demand was slow and market was devoid of any special firmness. Domestic Berries were in light stock, with inquiry also quite limited. Cranberries, both domestic and Eastern, were in fair supply and prices without quotable change.

Apples, fancy, # 4-tier box. 1 25 @ 1 50
Apples, good to choice, # 50-lb. box. 75 @ 1 00
Apples, common to fair, # 50-lb. box. 25 @ 50
Cantaloupes, # crate. 50 @ 1 00
Cranberries, Cape Cod, # barrel. 8 50 @ 9 00
Cranberries, Coos Bay, # 60-lb. box. 2 25 @ 2 50
Raspberries, # chest. 5 50 @ 7 00
Grapes, Cornichon, # crate. 40 @ 65
Grapes, Isabella, # crate. 40 @ 75
Grapes, Muscat, # crate. 40 @ 65
Grapes, Black, # crate. 30 @ 65
Grapes, Seedless, # crate. 85 @ 1 15
Grapes, Tokay, # crate. 40 @ 75
Grapes, Zinfandel, # ton. 28 00 @ 32 00

Grapes, Mission, # ton. 23 00 @ 27 00
Nutmeg Melons, # box. 30 @ 60
Peaches, # box. 40 @ 75
Pears, Bartlett, # 40-lb. box. 75 @ 1 35
Pears, other kinds, # box. 40 @ 1 00
Persimmons, # box or crate. 50 @ 1 00
Plums, choice large, # box or crate. 65 @ 80
Plums, small, # box. 35 @ 50
Prunes, # crate. 35 @ 75
Pomegranates, # small box. 40 @ 65
Quinces, # box. 35 @ 60
Strawberries, Longworth, # chest. 7 00 @ 9 00
Strawberries, Large, # chest. 3 00 @ 5 00
Watermelons, # doz. 75 @ 1 50

DRIED FRUITS.

While there is a fair movement outward in cured and evaporated fruits, shipments mainly represent the filling of back orders. Wholesale dealers are busily engaged in moving stocks already in hand, and are giving little attention to offerings, unless of superior qualities and especially desirable lots. There are no changes of consequence to record in quotable rates, and for choice to select of most varieties the market is firm at prevailing values, if attempts are made to buy. On immediate selling pressure, concessions would likely have to be granted to effect prompt sales, especially on small quantities, carload lots of uniform and high quality being given the preference. Apricots tend more in favor of sellers than any other variety, the output of the dried product of this fruit not having been heavy the past season, a fact which Eastern and foreign buyers are fully realizing, and they are taking hold at steadily hardening values. Any changes in prices of best grades of Apricots during the balance of the season are almost certain to be to higher figures. Market for White Figs is also quite firm, particularly for choice pressed, with light offerings and good shipping and local demand. Black Figs are in fair supply, are not eagerly sought after, and are obtainable at a materially lower range of values than current on White. In Apples there is not much movement at present, but there is no special accumulation of stocks. Peaches and Prunes are heaviest in evidence and only for the best of them, large and fine, are prevailing values being well maintained at this date.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice. 4 1/2 @ 5 1/2
Apricots, Moorpark. 7 @ 10
Apricots, Royal, good to choice, # lb. 5 1/2 @ 7
Apricots, Royal, fancy. 7 @ 7 1/2
Figs, 10-lb. box, 1-lb. cartons. 65 @ 80
Nectarines, # lb. 3 1/2 @ 4 1/2
Peaches, unpeeled, choice. 4 1/2 @ 5 1/2
Peaches, unpeeled, fancy. 5 1/2 @ 6 1/2
Pears, halves, fancy. 7 @ 8
Pears, halves, choice. 5 1/2 @ 6
Pears, halves, fair to good. 3 1/2 @ 4 1/2
Plums, Black, pitted. 4 1/2 @ 5
Plums, Red and Yellow. 5 @ 5 1/2
Prunes, Silver, good to fancy. 4 1/2 @ 6
Prunes, in bags, 4 sizes, 2 1/2 @ 2 3/4; 40-50s, 4 1/2 @ 4 3/4; 50-60s, 3 1/2 @ 3 3/4; 60-70s, 3 @ 3 1/4; 70-80s, 2 1/2 @ 2 3/4; 80-90s, 2 @ 2 1/4; 90-100s, 1 1/2 @ 1 3/4.

COMMON SUN-DRIED.

Apples, sliced. 3 1/2 @ —
Apples, quartered. 3 1/2 @ —
Figs, White, in bulk. 3 1/2 @ 5
Figs, Black, in sacks, # lb. 2 1/2 @ 3 1/2
Plums, unpitted, # lb. 1 1/2 @ 2 1/2

RAISINS.

Most of the crop is now cured and is in the main of fine quality, although in the matter of size the Muscates are not proving all that could be desired, the proportion of large raisins being light, making it necessary to reject numerous orders for high-grade clusters. Five and six crown, or Dehesas and Imperials, are in such light stock as to be hardly quotable. Seedless Thompsons and Sultanas are meeting with considerable attention and sales are reported above Association quotations.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscates, 50-lb boxes, 5c # lb; No. 3 crown do, 5 1/2c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/2c; No. 2 crown London Layers, 20-lb boxes, \$1.30 # box; No. 3 crown do, \$1.40; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

The market for Oranges is quiet, stocks and offerings being both of very light volume and prices practically unchanged. In quotable values for Lemons there are no changes to record, although for choice to select the market is tolerably firm at prevailing rates. Limes are in increased supply and lower than last quoted.

Oranges, Late Valencia, # box. 3 00 @ 4 00
Lemons—California, select, # box. 2 50 @ 2 75
California, good to choice. 1 50 @ 2 00
California, common to fair. 75 @ 1 25
Limes, Mexican, # 1000. 4 00 @ 4 50

NUTS.

There is a fair movement in Almonds, but at rather easy figures as compared with values lately quoted, especially for other than most select paper-shell. New crop Walnuts are now in moderate spot supply, showing in the main fine quality, and are meeting with good demand at

current rates. Peanuts are in very light stock; some are being imported from Japan.

California Almonds, shelled. 15 @ 20
California Almonds, paper shell, # lb. 10 1/2 @ 11 1/2
California Almonds, soft shell. 7 1/2 @ 9
California Almonds, hard shell. 4 1/2 @ 5 1/2
Peanuts, California, fair to prime. 4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked. 6 @ 6 1/2
Walnuts, White, soft shell, # lb. 10 1/2 @ 11 1/2
Walnuts, White, standard, # lb. 9 1/2 @ 10

WINE.

Market shows the same healthy condition previously noted. There is little wine now offering from or held by growers. Dry wines of last year's vintage are quotable nominally at 24 @ 30c per gallon, and to secure selections a higher range of values would have to be paid. There is a fair movement outward, both by sea and rail, mostly of blended stocks. Last Saturday's Panama steamer carried 79,719 gallons and 12 cs., the larger portion being destined for New York. Ship I. F. Chapman took 2,550 bbls. for New York. Wine Grapes are selling at a wide range, owing to district, variety, quantity and quality. Grapes for dry wines are ranging from \$23 @ 35 per ton, most of the business being within range of \$25 @ 30, and the higher figures mainly for select white grapes. Grapes for sweet wines are going at a quotable range of \$12 @ 22 per ton, as to variety, the higher figures being for best white and the lower prices for Tokay culls and common Muscats.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with corresponding time the previous year, are as follows:

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks. 98,978	1,931,749	2,039,805
Wheat, centals. 149,427	1,792,829	1,766,358
Barley, centals. 96,550	2,873,760	2,313,976
Oats, centals. 18,628	326,630	423,083
Corn, centals. 1,692	17,722	20,308
Rye, centals. 2,954	75,833	16,185
Beans, sacks. 87,279	265,035	163,116
Potatoes, sacks. 32,213	383,515	404,060
Onions, sacks. 6,851	94,533	104,743
Hay, tons. 2,968	87,292	49,051
Wool, bales. 1,825	25,779	30,115
Hops, bales. 1,207	7,027	3,530

EXPORTS BY SEA.

FOR THE WEEK.	Since July 1, 1902.	Same time last year.
Flour, # sacks. 49,760	1,320,012	1,565,632
Wheat, centals. 89,493	1,639,829	1,511,819
Barley, centals. 76,496	2,198,457	1,598,420
Oats, centals. 478	10,988	2,074
Corn, centals. 435	11,760	7,992
Beans, sacks. 893	6,190	10,586
Hay, bales. 8,570	54,866	4,573
Wool, pounds. 17,314	399,869	398,816
Hops, pounds. 35,945	90,199	123,040
Honey, cases. 13	1,235	2,532
Potatoes, pack's. 2,845	25,872	12,995

Eastern Dried Fruit Market.

NEW YORK, Oct. 22.—The market for evaporated apples continues firm, with small available supplies. Common are quoted at 5 @ 6 1/2c; prime, 7 @ 7 1/2c; choice, 7 1/2 @ 7 3/4c; fancy, 8 @ 8 1/2c. Spot prunes are in somewhat more liberal supply and prices therefore show an easier tendency, particularly on smaller intermediate sizes, while the larger are still scarce and firmly held. Prices range from 3 1/2 @ 8c for all grades. Apricots are in better demand and firmer at 7 1/2 @ 11c for boxes and 7 @ 10 1/2c in bags. Peaches are steady and unchanged at 12 @ 16c for peeled and 7 @ 10 1/2c for unpeeled.

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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

I Can Sell Your Farm

no matter where it is. Send description, state price and learn how. Est. '95. Highest references. Offices in 14 cities. W. M. Cstrander, 3002 N. A. Bldg., Philadelphia

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The Lands About Tulare Lake.

DEVELOPMENT OF A PECULIAR AND PROMISING REGION.

By the use of Kings river water for irrigation purposes in the numerous ditches which show on our first page map of most of Kings county, by the gradual filling up of the branch of the river going to Tulare lake and always the principal source of supply to it, and the gradual deepening of the branch of the river going north to the San Joaquin river for the use of settlers in the Summit lake irrigated section of Fresno county, the volume of Tulare lake has gradually but steadily been reduced during the last twenty years, and a fine body of exceedingly level and productive lands which those shallow waters once covered has been exposed to use.

Tulare lake was merely a make-believe lake. It was an appearance of one without the usual characteristic of depth, which has gradually been made to disappear by the extensive and increasing use of the Kings river and other stream sources of the lake for irrigation purposes on higher and more absorbent lands in Fresno, Tulare and Kings counties. Within the last few years the lake has several times entirely dried up, and nearly, possibly quite, did so this summer.

The lands uncovered by the shrinking of the lake are as level as a floor. They have a gentle, even slope to the southwest of about 1 foot to the mile, as popularly stated, which slope ends at the foot of the mountains between the San Joaquin and Salinas valleys, which form the western border of the lake. In one place, between Hanford and Angiola, there is depression of some extent, but only a few feet deep and of a flat nature, making a long and shallow slough, and when the lake is dry near the hills there is a slough perhaps some 40 rods long by a few wide and a few feet deep, and these are all that mark the level floor of the lake otherwise unbroken save by a few young low willow bushes that find themselves growing about half the year in the shallow lake and about half on dry land. Save these bushes and the few houses widely scattered, and to the southwest not even the latter, there is nothing to greet as it takes in the level expanse from a point say 15 miles south of Hanford save the tops of the mountains that rise in air beyond the horizon on the west, and the line of trees that marks the limit of the lake lands on the north between there and Hanford and the scattered clumps of the same on the east.

These lands, in the main, constitute in some respects a peculiar section of the State. In many parts, if not most of their extent, the top soil is thin, only a few inches thick in many places, and underlain with a sort of marl or baked clay. Success in the handling and cultivation of these lands depends more upon not plowing than any other one thing. It is a place where crops may be harrowed in on the virgin land, and with that treatment the land will produce almost anything abundantly. On the lands more immediately about the lake and overflowed in winter the crop of weeds is immense, and the crops of

wheat equally so when the weeds don't get it; in which latter case the hogs get it, with perhaps as much net profit, at least with a considerable saving over entire loss.

For the Buena Vista and other irrigation districts a main ditch is projected to run from Kings river to Cross creek, and work for formation of a company to operate it has been for some time under way.

This is also an artesian well section, where it seems, so far, that any one who cares to sink a well from 300 to 900 feet can get pure soft water, often with a mineral taste, and accompanied in its flow by gas enough to furnish fuel and light for an ordinary household. All that is done to secure the gas as it passes off from the effervescing water is to turn a gas-tight, metallic tub of some size over it, and pipe it from there to house or outbuildings.

The following very interesting letter from Mr. L. P. Denny shows what can be done on these lands. Mr. Denny came to them from Gridley, this State, where he had followed well boring.

MR. DENNY'S EXPERIENCE AND OBSERVATION.

I came to Angiola on Oct. 30, 1898, and had cash enough to pay for 320 acres of land at \$7.50 per acre, build a house and barn at a cost of \$700, and bore a well 950 feet deep that cost \$2140. During the first year no crops were sown. From 1898 until the first crop of hay was cut in 1901 no assistance was had on the ranch, my wife and myself doing all the work. During the spring and early summer of 1899 we built 4 miles of ditches and 9 miles of checks, Mrs. Denny driving the train of ten horses or running the plow. Later I built a reservoir covering two acres and inclosed by a levee 5 feet high.

In the fall of 1899 I sowed the 320 acres to alfalfa, sowing the seed on the tule sod and harrowing it in with a heavy harrow. The tules at this time were higher than my head as I rode the wheel horse. The October rains brought the seed up, and by spring (1900) it was well started. As the warm weather came on a battle royal began for the mastery between the alfalfa and the tules. The alfalfa was victorious and by the 1st of July the tules appeared dead; the alfalfa took the moisture and grew, while the tules died. I mowed the growth of tules and alfalfa and left it on the ground. Later the alfalfa grew from 6 to 18 inches high. We cut only hay enough to fill the barn. Mrs. Denny loaded the hay and drove the derrick horse. After a load was put in the barn we both mowed it away.

In the spring of 1900 we planted a garden and large number of shade trees, mostly Balm of Gilead, some of which at this writing measures 24 inches in circumference and less than three years old. At this time we built a gas tank and placed it over the artesian well and conducted the gas to the house, where it has since been used for heating, lighting and cooking purposes, also for running an incubator and brooder. Besides gas, our well supplies us with abundance of pure water for irrigation, household use and watering stock. I have piped it to every field, building and corral on the ranch. Fruit trees and berry bushes were planted in the spring of 1901, all of which are doing well.

In the fall of 1900 we bought 120 head of young cattle, mostly calves and yearlings.

Until the crop of 1901 was sold our only revenue from the ranch was the few eggs and chickens we sold, and

Catarrh Cannot be Cured

With LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O. Sold by druggists, price 75c. Hall's Family Pills are the best.

small quantities of potatoes, tomatoes, etc., from the garden.

In 1901 we cut and sold from the ranch 500 tons of hay, at \$6 per ton, \$3000; and from 100 acres we cut and threshed alfalfa seed to the value of \$2400; hogs sold, \$1000; hogs on hand valued at \$400; increase in value of cattle, \$1600; poultry and eggs sold and on hand, \$300; wheat sold, raised on rented land, \$400; total, \$9100.

On Sept. 1, 1902, we had on hand 300 cows, 100 calves, 100 miscellaneous stock, 10 horses and mules, 7 fine colts which we have raised, 175 hogs, and a good stock of poultry. Over 100 head of our cows are thoroughbred Jerseys. None but the best thoroughbred breeding animals are used on the ranch. In March, 1902, I purchased 320 acres more of this tule land, and immediately proceeded to check it and build ditches to conduct irrigating water to it. In October I shall sow it to alfalfa, sowing twelve pounds of seed broadcast and harrow it in. I have found by experience that the less this ground is disturbed the better. On land that I plowed three years ago nothing has ever grown, although it has been sown to alfalfa annually. My ranch is located in the delta of Tule river, 2 miles further toward the lake than any channel was made by the stream.

I claim no great credit for what I have accomplished here. On the contrary I feel that I have accomplished very little. I can look back and see where I could have done much better. What I have done any man could do with the exercise of good judgment and the necessary amount of pluck to stand by it. I was not a farmer or stockman. If I had been a farmer with fixed ideas and orthodox methods I would have failed. I had this to learn. I studied the requirements of the country and met them in a practical way.

Visitors to Kings county are usually brought to my ranch. They tell me mine is the banner alfalfa ranch of Kings county. Since I have lived here any man who could earn \$1 a day for a year could own 160 acres of as good land as mine; but land has slowly advanced in value.

This is what I have done during my stay on old Tulare lake. I could get you some very nice photos of same on the ranch which I will send you if you desire, the alfalfa fields, the stock, the unsubdued tules and the artesian well.

The cabbage, corn, potatoes, tomatoes, beets, peas, beans, etc., which you saw on our table when you were here were raised by irrigation from the artesian well and were cooked by natural gas from the same well.



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contracted cord, thrush, grease heel and all forms of lameness yield readily to

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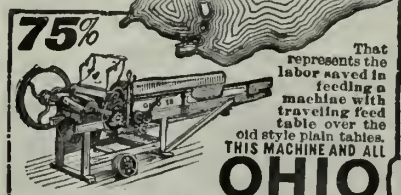
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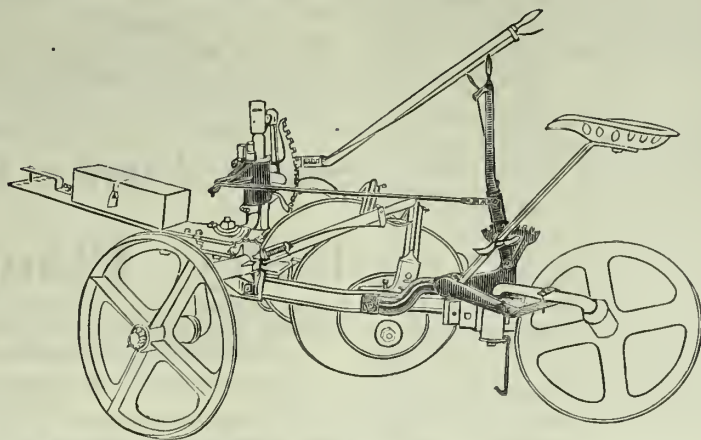
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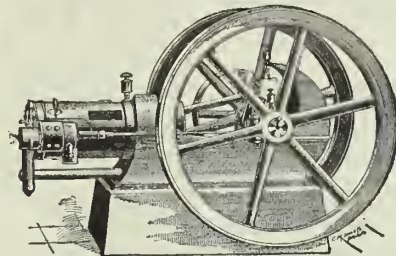
SINGLE, per package, containing ten or more doses, according to age of animals.....	\$1 25
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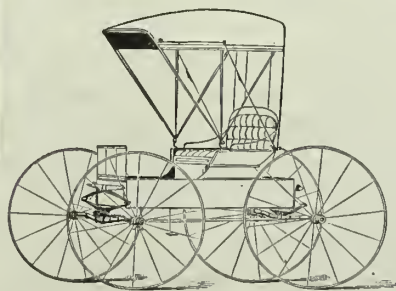
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Tulare Grange.

To THE EDITOR:—Tulare Grange held its regular semi-monthly meeting on Saturday, the 18th inst.

After reading and approval of the minutes, under the head of "Reports of Special Committees," the special committee appointed at last meeting to report a programme of subjects for Grange consideration for the next six months reported a very excellent selection, and were thanked for the same by a vote of the Grange.

Under the head of "New Business," on motion of Brother Shoemaker, the Grange thanked Brother Julius Forrer for the very choice selection of grapes from the U. S. Experimental Station, sent by him to the State Grange at Sacramento on behalf of this Grange.

The Grange being duly informed, in a report of the proceedings of the State Grange, of Brother D. T. Fowler's very interesting and instructive account of his visit to Europe and to the International Convention of Co-operative Associations, held lately in Manchester, England, and this Grange being desirous of more and fuller information on that subject, particularly as to the working of the system known as the Rochdale system of co-operation, Bro. Fowler was by unanimous vote invited to repeat the same for Tulare Grange at a special and open meeting to be held in Goldman's Hall, on Saturday, October 25, at 1 p. m. The representatives of the press and the public are cordially invited to be present, as the lecture is of special interest, particularly so to all interested in the co-operative principles.

On motion, the Grange formed itself into a committee of the whole for the consideration of the proposed constitutional amendments to be voted on at the State election to be held on the 4th of next month.

Senate No. 4 having been approved of by this Grange at its last meeting, and considering it essential to a systematic course of public education, the Grange recommends the adoption of same.

This amendment empowers the Legislature to levy a special State tax for high school purposes, thereby rendering unnecessary the district tax now levied for high schools.

Senate Amendment No. 18, providing for a division of the State into fish and game districts, was passed without definite action and left to the more mature consideration of the citizen, the members of the Grange not having heretofore had their attention called to the subject sufficiently to give it their approval or consideration.

Senate Amendment No. 3, exempting bonds from taxation, was next considered.

In advocacy of this measure, it was stated that bonds are sold out of the State and do not, consequently, pay any tax; that if bonds were exempt from taxation more of them would be bought in the State, and the interest kept in the State, and that money on bonds would be had on a lower rate of interest. In opposition to the amendment, it is stated that the claims for exemption have no merits in equity or justice; that the Constitution provides, after a careful, full and exhaustive consideration of the subject by the convention that framed the Constitution, that bonds are an evidence of interest in the property securing their payment, and, as such, shall be taxed in the locality liable for their payment; that with the necessary legislation a tax can be as readily collected on bonds as it is on trust deeds or mortgages, and that the claims of the advocates of the exemption of bonds from taxation is in bad faith, for, if they desired to be on an equality with citizens of other States holding our bonds, and whom the assessor can not reach, the proper course is to ask the Legislature to provide for the enforcement of the payment of their taxes by bondholders outside the State, which can be so readily done; and that to adopt the proposed amendment is an outrageous catering to the dishonest

bondholder, whose manifest duty is to pay his honest taxes and will be a fraud on the citizen who honestly pays his taxes; that the claim, money on bonds will be had at lower rates of interest, is designed to mislead—otherwise the proposed amendment would limit the rate of interest to be paid. This the advocates of the proposed amendment refused to do, for when the Hon. Harry Levinson, in the Assembly, offered an amendment limiting the interest to 3% per annum on bonds exempt from taxation, they had it voted down unceremoniously. That 3% per annum fully equals the net earnings for any decade past of property in this State or any district thereof, and that as long as 2% bonds of the United States sell at a premium—they now bringing a premium of 9 1/2%—so long there need be no fear but that good State, county, city or district bonds, bearing 3% per annum interest and exempt from taxation, will readily sell at par and be anxiously sought for.

The Grange denounces the proposed amendment as one emanating from a desire to escape honest taxation, and asks that it be voted down.

Senate Amendment No. 6, authorizing any city with a population of 3500 to frame a charter for its own government, was passed without action by the Grange.

Assembly Amendment No. 25, providing that on all public works eight hours shall in any calendar day constitute a day's work, was very generally and freely commented on and approved.

Senate Amendment No. 14, empowering the Legislature to provide for the use of voting machines within certain designated subdivisions, was freely discussed and recommended.

Senate Amendment No. 20, empowering the Legislature to provide for State highways and to extend aid in whole or in part to county highways, after a full and free consideration, was approved and recommended.

Assembly Amendment No. 28, providing for a single commission of five for all State purposes specified, being now so freely commented on, discussed and condemned by the press of the State, was condemned by the Grange.

Senate Amendment No. 9, providing that offenses now required to be prosecuted by indictment shall be prosecuted by information, after committment by a magistrate, as may be prescribed by law, was approved.

The third and fourth degrees were now conferred on a class of two.

The question box was now opened and two questions found therein:

1. Have prunes this year been of a good average in size? If not, why not?

2. Is the present rating of prices for prunes, according to the four sizes, 60 to 100, equally fair for grower and buyer?

Discussing the first, it is conceded that this year prunes are in size below an average, and that this condition arises from lack of cultivation, lack of proper thinning and overbearing. It was agreed by all that the prune orchard must be well cultivated and the prune tree pruned as other fruit trees are to produce new wood and get a better quality of fruit; also that, to prevent overbearing, thinning, either by pruning or by hand, must be resorted to.

Considering the second question, it was admitted a basic price, according to the four sizes, is fair to the grower and buyer; but in grading, as now done, there is a great opportunity for fraud, which can only be prevented by the grower being present and watching how his prunes grade. It was agreed every prune grower should grade his own prunes and sell only such as pay, small prunes to be held by grower in anticipation of a higher market, or fed to stock.

The Lecturer announced that the subject for next meeting will be National Grange subject: "To What Extent is the Grange Fitting Its Members

to Hold Public Office, and Why?" with an alternative question: "Are Literary Exercises Primarily for the Entertainment of the Grange or for the Mental Development of Those Participating?" J. T.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

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Needs of the University of California.

President Wheeler writes to the Dairy and Produce Review as follows: I am glad to note that in your number of October 2d you protest against the "pitiful sums" the University is able to award to the subjects of such importance to this State as animal industry and dairying. The appropriation for dairying last year was \$10,000, this year \$8000 in addition to the building of a dairy barn costing \$2,900 of the General Permanent Improvements Fund; that is, last year, 1901-02, \$10,000; this year, \$10,900. This is over 10% of the added appropriation of the State, and we have been, of course, criticized by some for applying so large a proportion of our new increase to one subject. We ought to have \$20,000 for dairying, \$20,000 for the maintenance of the farmers' institutes, \$25,000 for forestry and a liberal provision for instruction in irrigation. We try to maintain all of these things on utterly inadequate appropriations. The University labors along, patching out here and patching out there, unable to make proper provision for any single branch of instruction brought under its charge. People have not appreciated how much it is called upon to do and how little it has to do with. If it were not for private gifts, which are coming to us from time to time, we should not be able to go on. During the last two years we received in gifts from private persons \$800,000, from invested funds \$269,000, from the State for current expenses of education \$477,000, \$100,000 of this being a special appropriation by the last Legislature. The money received in gifts is mostly for specified purposes and in general only the income is used. From the United States' Government we received \$80,000. Only about a third of our total receipts come from the State. Does it not seem fair that the State should at least give as much as is given from other sources? I venture to say that \$25,000 expended by the State in the interests of forestry by the University would do more good than \$100,000 as ordinarily expended.

BENJ. I. WHEELER.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING OCTOBER 7, 1902.

- 710,400.—COAT AND HAT LOCK—G. E. Allen, S. F.
 710,838.—SAWING APPARATUS—J. A. Brines, Fresno, Cal.
 710,871.—HOOK AND EYE—Dora S. Daily, S. F.
 710,912.—FISH CLEANING MACHINE—A. J. Farmer, S. F.
 710,835.—GARMENT SUPPORTER—F. Ferguson, Santa Rosa, Cal.
 710,882.—MOTOR LOCK—G. S. and A. G. Guenther, Los Angeles, Cal.
 710,863.—FASTENER—A. Haug, S. F.
 710,689.—MASSAGE MACHINE—W. W. M. Hickey, S. F.
 710,690.—GOLD SEPARATOR—W. W. M. Hickey, S. F.
 710,580.—FUEL—C. J. Holmes, S. F.
 710,462.—SETTLING TANK—R. D. Jackson, Reno, Nev.
 710,869.—RAISING WRECK—Johnson & Jacobson, Chinook, Wash.
 710,700.—BORING TOOL—J. Lund, S. F.
 710,501.—CARRIAGE POLE AND NECK YOKE—M. McNutt, S. F.
 710,599.—FOUNTAIN PEN—J. P. Murdock, San Diego, Cal.
 710,897.—QUICKSILVER FURNACE—R. Scott, San Jose, Cal.
 710,719.—WRENCH—J. J. Seeman, Barstow, Cal.
 710,898.—OIL BURNER—E. J. Sharp, Alhambra, Cal.
 710,899.—OIL BURNER—C. W. Sievert, Los Angeles, Cal.
 710,900.—LAWN RAKE—F. A. Smith, Los Angeles, Cal.
 710,722.—PADLOCK—H. A. Smith, Los Angeles, Cal.
 710,813.—CONVEYOR—J. W. Stancart, S. F.
 710,814.—ADVERTISING DEVICE—E. Steinhauer, Watsonville, Cal.
 710,903.—LID CONTROLLER—L. J. Sticklin, Chesham, Wash.

Unique Water-Power Conditions of California.

The wonderful results which California has accomplished in the transmission of electricity to distances greater than anywhere else in the world, leads to an interest in its peculiar type of water-power possibilities which in part makes this great electrical development possible. The secret of the efficiency of California powers lies in the excessive grades of the mountain streams rather than in an unusual volume of flow, the near proximity of the high Sierras to the populated valleys and their quick descent giving the streams unusual advantages in this regard. As the controlling factor in the planning, for power plants is largely a question of minimum water supply, the Hydrographic branch of the United States Geological Survey, in response to many requests for information concerning this particular point, is making a system of low-water measurements of all the principal streams in the State from Mt. Shasta south to San Bernardino valley. The work is under the charge of J. B. Lippincott, resident hydrographer for the Geological Survey. On many of these streams continuous records have been kept on the trunk system at points where they issue from the mountains, but few accurate data have been available as to the flow on the higher portions of the stream and its tributaries where the grades are particularly steep.

The method pursued during the present season is to place one gaging party on the trunk stream at the regular gaging station where records have been kept, and by means of an automatic register obtain a record of hourly flow at this point for a period of about a week. The lower hydrographer also travels up and down the trunk stream for a distance of 10 to 15 miles, making measurements at numerous important points. At the same time a second gaging party is making a circuit of the upper portion of the basin at elevations of approximately 3000 feet, gaging all the tributaries as well as the trunk streams at these upper stations. As a result of these observations comparative volumes on each of the streams observed will be made available.

Another feature of interest in the work which is being carried on in southern California during the present summer consists of making determinations of the underflow through the gravel beds which frequently occur in this locality. This is done by the electric method which has been invented by Prof. Charles S. Slichter, of the University of Wisconsin. Observations have been made at the Victor narrows, the San Gabriel narrows, and the narrows of the Los Angeles river, for the purpose of determining underflow.

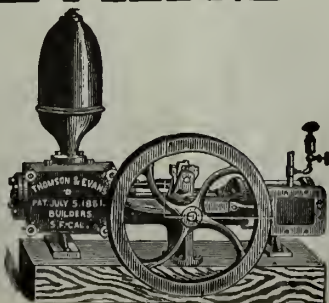
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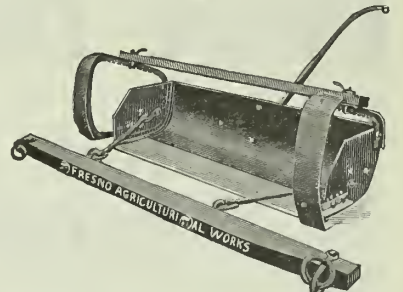
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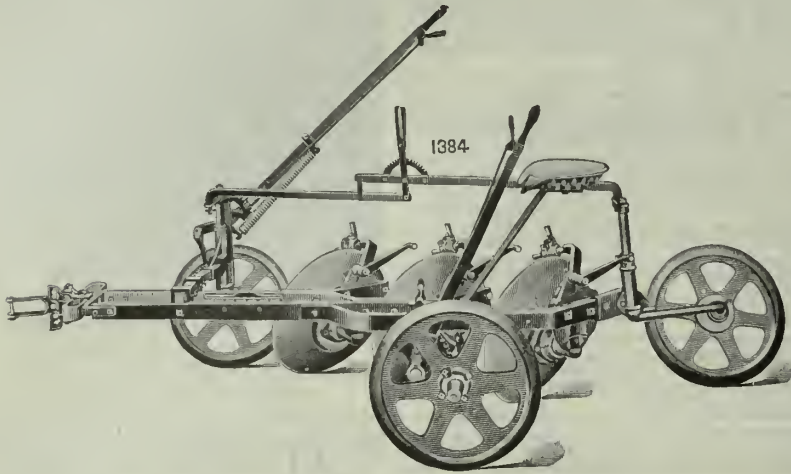
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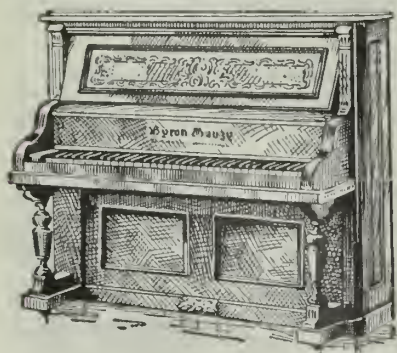
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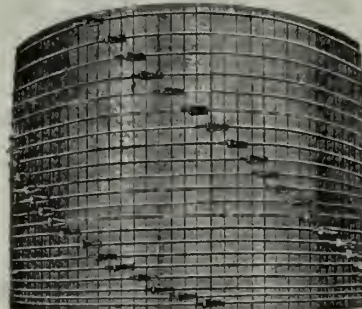
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 18.

SAN FRANCISCO, SATURDAY, NOVEMBER 1, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

In the Vacaville District.

The Vacaville district is too well known to our readers by constant reference to its productions to require detailed descriptions. For a score of years it has been steadily growing and expanding its output on the basis of demonstrated suitability, building up its towns and multiplying its rural homes as actual productive achievements have extended. It stands now as an exceptional instance of safe and stalwart development even in a State where so many localities are going forward. The pictures used herewith are only samples. The camera could be shifted twenty times or more within the district without overlapping the edges of the fruit landscapes thus secured, and homes like that shown are to be seen by the hundred. Nine-tenths of all this change from a grain and pasturage district to a fruit region has been accomplished during the last two decades, and yet it is likely that even greater development may be secured during a similar period in the future, for the district has a rich environment and grand



Stretches of Fruit Plantations, West of Vacaville, Solano County.



A Typical Fruit Growers' Home in Solano County, Central California.

opportunities for adding irrigation development to the rainfall production which has been its pride hitherto. The central Vaca valley and its hills and its connecting smaller valleys have a large rainfall, while outlying plains can be much improved by the utilization of water which is waiting to be used. But as it is, the district is shipping over 1000 carloads of fruits annually, and both early and late (because of the peculiar climatic conditions prevailing) it has fine shipping fruits to sell. The landscape herewith shows how dense the orchard and vineyard planting is—veritable seas of blossom in the early spring and seas of verdure immediately following. Largely upon the success in the Vacaville district, fruit planting in other interior valley regions has been undertaken, and Vacaville men have been teachers in fruit planting from the beginning. Still with all that has been done, the local population and improvement are still advancing as has been suggested. The State thinks well of Vacaville, and delights in the youthful zeal which marks its seniority.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, November 1, 1902.

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The Week.

The weather reports on the next page contain full data of the storm of last week and show how wide and how deep it was in some places. Field work has started up actively in many districts and the earth is turning splendidly. There ought to be an immense area of grain put in if the season holds as it has begun and present prices and outlook are also encouraging. There has been some loss of late fruits by the rain which is unfortunate, but the general benefit will be large. Wild forage is starting briskly in some places and a good pasturage season is also portended.

Grain prices still hold up well. Wheat has continued upward and occasioned an advance, also in local flour figures. The Australian movement of wheat is adding much strength to the situation, but ocean freights are still low, though it is reported that Australia will take ten cargoes. Barley has been firm on the spot, but a little weaker on futures. Oats and corn are firm, with small offerings. Rye is selling at top figures. Beans are quiet, but firm, as large overland shipments are expected immediately. Receipts of beans are less, but still in good volume. Millstuffs are active at full prices, with small offerings. Hay is steady, with moderate supplies and good demand. Beef is about the same and mutton a little better. Hogs are unchanged; there are still too many small and too few large hogs to suit the packers. Butter is steadier this week and supplies more readily handled. Cheese is higher under light receipts. Eggs are doing well again, the drop in fancy fresh turning more trade to them and supplies are cleaned up well. Poultry is still going well, though there has been some drooping since our last report. Potatoes and onions are in large supply, except choice Salinas Burbanks, which are scarce and high. Fresh fruits have had about the same range, except that table grapes have been in sharp request. Dried fruits are steady, though trade is not at the moment brisk. The outlook is good. Nuts are firm and honey steady with fair movement. Hops are quiet and strongly held. Wool is not opening quite as briskly as expected at the country sales. Conditions here are unchanged.

The people who grab timber land and the people who fence out other people from public lands are not having a very good time this year. It is telegraphed from Washington that something like six million acres of land in northern California have been withdrawn from the public land area. It seems that Uncle Sam

prefers to keep this land for himself and not to be flimflammed by timber claimants. It is anticipated that reservations will be established as follows: The Klamath river forest reserve, embracing 3780 square miles; the Mount Shasta reserve, embracing 3024 square miles; the Lassen Park reserve, 1692 square miles, and the Diamond mountain, 872 square miles. The location of the respective areas is indicated by their names. The opening of lands held by fence titles is also continuing. Colonel Mosby, the special agent of the government, reported to the President last week that in Colorado and other Western States millions of acres of public lands that ought rightfully to be open to the homestead settler were occupied by stock raisers. After concluding the investigation it is making the Interior Department will oust such stock raisers as are occupying the public lands unlawfully.

The ghost of the California Cured Fruit Association will not down. We have just received a circular from a committee of well-known growers at San Jose urging that all members sign a written request that the Association be dissolved, and its affairs be wound up voluntarily, and specifying the reasons why the winding up of the affairs of the Association is deemed advisable. It cites the fact that the Association is dead and ought to be buried and the \$100,000 now in hand distributed to the heirs and not used up in hiring mourners at full rates. It is believed that if members largely sign the request which is being sent to each, the following persons, who are members of the Association, can act in liquidation and in winding up the affairs of the Association: W. P. Lyon, E. T. Pettit and C. W. Childs, of Santa Clara county, and it is promised that a period of six months from the time such liquidators take charge of the affairs of the Association will suffice to secure such liquidation and winding up of the Association. If this is a practicable way to end the thing it should be popular. It is reported that signatures are being received in very large numbers.

Readers should not overlook two great round-ups of agriculturists in California during December. The annual Fruit Growers' Convention will be held in this city Dec. 2 to 5—four days—with the usual full programmes of addresses, reports and discussions, which fix up the railroads and the fruit trees so that they manage to run along for another year, in spite of all the difficulties which the convention brings to light. This year's convention will be replete with interest, and all fruit men should be in the city during the first week of December. A great meeting at the south will be the Farmers' Club Institute at Santa Ana December 16 to 18. This will be a delegate meeting, in which all the Farmers' Clubs in southern California will participate, and each county will bring forward subjects of great interest. If the southern people could come to San Francisco and the northern people go to Santa Ana, they would all know more and feel better.

The announcement is made that the United States has something like \$10,000,000 ready to go ahead with the irrigation reclamation of the arid regions as provided for by the Act of the last Congress. We are a little afraid about that money. It seems pretty large and there is considerable likelihood that it may attract the attention of all the schemers and boomers on this half of the planet. The beneficent work which has been provided for is likely to be mixed up with all sorts of private and corporate schemes for improving land which can be had for nothing and sold high, or to improve land for which the Government has no title and consequently cannot deliver to settlers, as the public supposes the purpose of the expenditure will be. Of course, this may not happen, and we hope it will not, but it will be a very good plan to be sure that all connected with the work are really philanthropists and loaded with genuine public spirit, and have no axes under their jeans to pull out for grinding when the wheels begin to go round. We have had too many great public land schemes leading to private purposes in the past. Let us be sure this time that the affair is great and only great.

If this paper pleases you it will please others. Send us the names of any of your friends, and their addresses, whom you would like to have it and we will gladly send them a sample copy of it.

QUERIES AND REPLIES.

Oak Moths, Diabroticas and Blackberry Borers.

TO THE EDITOR:—I send you a number of insects. The moths are found in the orchards very plentifully. What are they and do they do any harm? The green bug eats the apples and is very destructive. Is there any remedy for it? The worm was found in the Mammoth blackberry. It begins at the surface and works down into the roots. Please let me know what it is and the remedy.—READER, Watsonville.

The moths which you send are *Phryganidea californica*. Their larvæ destroy the foliage of the oak trees and have not yet been detected doing damage in orchards. The green bug which eats the apples is the *Diabrotica soror*. It is sometimes called the "green ladybug," but that is a libel on the ladybirds, because it does not belong to their group at all. It is a great pest, freely eating all kinds of fruits in their seasons, also destroying nearly all kinds of flowers by eating into the petals, and is destructive to many vegetables. It is very difficult to cope with it, because one cannot use poison on ripe fruit or on flowers without destroying their use or beauty. Fortunately, the insect is destroyed by its own enemies, so that it is seldom abundant in the same locality for many years together. It can be driven away by the use of smoke smudges, otherwise the grower seems to be nearly helpless.

The worm in the blackberry canes is the larva of one of the clear-winged moths. These insects affect strawberry crowns, raspberry canes and roots, and one of the species is the very destructive peach tree borer, which is giving so much trouble in the Santa Clara district. Prof. Woodworth of the State University has just published Bulletin 143, dealing in detail with the methods of destroying this insect, and possibly the bisulphide treatment used for trees may be satisfactory also for berry plants. The difficulty, however, will be to apply the vapor to so many crowded stems and the expense of it would be very large because of the great amount of labor involved. It has been held that in such small plants these root-boring larvæ can be destroyed by flooding during the winter time. If the ground could be checked up in such a way as to hold water for a week around the roots, it is believed that these worms would be killed. Some experiments in this line are suggested. It is, of course, necessary to actually hold the plants under water, not merely to have them in ground wetted by heavy rains, because this does not exclude the air.

California Honey Districts.

TO THE EDITOR:—What are the chief sources of honey supply of California; the localities best adapted to bee keeping; how long the honey season lasts in the "white sage" belts; the districts in which the last named plant is found; and the extent to which the field is already occupied?—READER, Tacoma, Wash.

The chief sources of honey supply in this State are: First, white sage and other wild vegetation of the California mountains; second, the vast alfalfa fields, blooming orchards and wild flowers of the San Joaquin valley plains. White sage is most abundant in the southern California mountain districts. The honey has been uncertain there for the last few years because of successive dry seasons, but as soon as an old fashioned wet year returns the honey production will return to old figures. While there has been a scantiness of white sage honey the production on an alfalfa basis has vastly increased, and the best honey producing district this year includes Fresno, Kings and Tulare counties. There is abundant opportunity for locating in both the districts named, but nothing short of personal exploration would yield satisfactory results. The best way is to come and look over the ground carefully and go upon your own judgment. Owing to the mild climate and the hosts of honey plants blooming at various seasons, the idle time for bees is very short, providing enough moisture is available for the thrift of the plants.

Large Flowered Mallow.

TO THE EDITOR:—Will you kindly tell me the name of the weed I send and how to get rid of it? It grows in the gardens and hop field and I consider it worse than morning glory. Is it abundant in this State?—P. M., Largo.

Mr. H. T. Hall of the University identifies the plant as "Large-flowered Mallow" (*Malva borealis*).

There are three mallows, all introduced weeds, more or less common in California. They are not usually considered to be as troublesome as the morning glory, or bind weed, since they do not multiply by creeping roots. The stems arise from a single tap root and if this is killed the weed ceases to grow. There is no special method of eradication. It should be prevented from seeding. By persistent cultivation during the summer and autumn the young plants may be kept down.

Horn Flies and Warble Flies.

TO THE EDITOR:—The horn fly, that woeful cattle pest, appeared on this ranch about six years ago. It is said to have been imported on cattle from Italy to New Jersey several years ago, and there spread over the United States. It would be interesting to know if there is a bird or other enemy to it in that country. The little terror will effectually prevent us from fattening our cattle—even if we succeed in reclaiming our ranges to the production of beef equal to Eastern stall fed, as we did in the fifties. At that time the only pests worthy of mention were the ox gad fly and the deer fly. The latter only troubled us three or four weeks, and on dry seasons not at all, being unable to develop themselves or to get out of the ground. A bulletin from the Agricultural Department at Washington accounts for the grub reaching its position on the cow's back in a rather remarkable way. We are greatly indebted to scientific investigators, but in this case I think they will find by and by they have gone wrong. I never specially looked for bot nits on the hairs of cattle, and as I had strong eyes when I was young it seems strange that I should overlook them; however, if others have seen nits that were bot nits (gad fly) on cattle, that settles it. Cattlemen call this fly the "heel fly" from the fact that it strikes cattle on the heel, which causes them to kick and shake their tail, when the fly instantly ascends to the back before the tail can be used to keep them off. Now for what purpose has nature endowed the fly with this instinct unless it is to lay an egg in the hair where the animal heat will hatch it, and the grub will bore through and ensconce itself comfortably under the hide where we always find it. When cattle are attacked by this fly they run to the water, if any is attainable, stand in it, immersing their heels for hours, where they bid defiance to the discomforted fly which leaves them severely alone. I write this to suggest an investigation to the Berkeley experts.—H. H. GIRD, San Diego county.

What you say about the horn fly is sadly interesting. The subject has been quite thoroughly studied by entomologists in the Eastern States, but no natural enemies are mentioned in their reports. As for the bot or warble grubs reaching the backs of the animals through the stomach and the flesh by an interior route does seem to be a roundabout method and quite contrary to the old conception, as you mention, but the fact has been fully demonstrated. It is not a mere impression, but is the result of actual discussion and tracing the process of the grub. In the face of that demonstration we simply have to believe that our old notions, which seemed to be very rational, were mistaken.

Plants for Clay Meadows.

TO THE EDITOR:—I have a field in Sonoma valley that I have been trying to set in alfalfa, but as yet has proved a failure. I think the ground is unsuitable, being a tough clayey soil and no subsoil. I now think of trying salt bush. Please inform me if the character of the ground is suitable; also how salt bush grows, thick like grass, or in bunches and patches. Can it be cut to feed green or has it to be pastured? What kind of soil does it thrive in and the right time to sow? If salt bush will not do what crop do you recommend for green summer feed? I have plenty water to irrigate the field.—SUBSCRIBER, Sonoma county.

Alfalfa prefers a light deep loam, with ample heat and moisture, and yet it will do quite well on heavier soils if kept just about in the right condition of moisture through the summer and not too long waterlogged in the winter. If you have been trying to start, but have not secured a good stand, it does not prove that alfalfa would not do reasonably well, but that you have seeded down in the wrong time, or the wrong way, or both. On such a heavy soil in a region of heavy rainfall and quite sharp winter frosts, all of which we find in Sonoma valley, the ground should be plowed in the fall as deeply as practicable and a subsoiler used after the plow, just as land is prepared for fruit planting. Check up for irrigation when the soil works well and in the spring, after heavy rains and frosts are over, cross plow at less depth, harrow and broadcast the seed about twenty pounds to the acre, covering with a light brush drag,

very slightly. Such a soil in such a situation ought to start the seed and give quite a cover to the ground; irrigation will be desirable as the summer advances.

But if you are fully convinced that the soil and situation do not suit alfalfa, seed with English rye grass and eastern red clover, and by irrigation you will get a fine pasture. Do not think of salt bush unless you have land which is too alkaline to grow other plants or some waste dry land on which you wish to try browsing plants. The Australian salt bush grows flat and can be gathered green by cutting around the root crown and taking up the mass with a fork. Gattle generally do not take to salt bush unless they are pretty short of feed; sheep and goats have fuller relish for it. It is not to be compared with alfalfa or other clovers or rye grass for pasture purposes, but when compared with nothing it is away ahead.

The Introduction of Lippia.

TO THE EDITOR:—I happen to notice only now that in two numbers of the PACIFIC RURAL PRESS (September 6 and October 11) mention is made of "lippia," in the first number reproducing a bulletin of the University of Arizona Agricultural Experiment Station, and in the second stating that it comes highly recommended from Arizona. This is a flagrant case of the old complaint, "sic Vos non Vobis," this plant having been received in Arizona from California, where it was introduced by myself a few years ago, through plants which I obtained from the botanic garden in Rome, Italy. There, and generally in southern Europe, where it is a native, and these last twenty-five or thirty years has been much spread in gardens, it is known as "Lippia Repens." The botanist of the University of Arizona refers it to "Lippia Nodiflora," and further goes on stating that this plant is a native of four out of the five continents, and that it is indigenous also to California and Texas. The specimens of Lippia Nodiflora which were sent to me from the department of botany of the University of California are quite distinct from my plant, as you can easily ascertain yourself; but this question of nomenclature has no special interest for the readers of your paper. What I desire to state, because it is true, is the Lippia Repens, which has already made its proofs as a valuable introduction, was first imported by myself to California at the end of 1897, and from Santa Barbara it has been distributed all over our State, Arizona and other States, as well as into Mexico and Australia. There is no reason for altering its name, which has a good standing, and much less to apply to it the puzzling appellation of "fog plant," while the fact is that Lippia Repens does not bear a fruit, and, as to fog, it has proved well enough that it can do without it.—DR. F. FRANCESCHI, Santa Barbara.

We are glad to have this statement. The botanists will have to clear up the tangle in nomenclature. It is evidently a true "repens" or creeping species which is needed to do what is expected of this plant.

Grading Apples.

TO THE EDITOR:—What information can you give us about machines for grading apples?—READER, Hobart, Tasmania.

Hon. W. R. Radcliff of the Watsonville Pajaronian, who keeps himself up-to-date on commercial apple growing, which centers for California in his district, advises us that grading machines are not in use there nor in Oregon. The work is done by men and women, by hand, owing to the presence of worm holes, stem rust and caterpillar scars—blemishes which a machine grading for size would not detect. In Oregon a machine is used for brushing the apples in districts where summer spraying is frequent.

Not for Drying Alone.

TO THE EDITOR:—I wish to set out an apple orchard of good drying apples, or, rather, of good apples which will dry well if the market would not warrant shipping green. I propose 30 feet apart as the distance. I would like to know what varieties are best and also what to do with the ground until the trees get big—plant peaches for drying or crop with cultivated crop? The distance from market and the roads we have to haul over prevent us from shipping anything in the way of fresh fruit. We have abundance of wood for fuel and as good apple land as is to be found in the State.—SUBSCRIBER.

Unfortunately, we have this query without trace of whence it came, and much depends upon locality in such a matter. As a general proposition, we would not advise fruit planting, except for local sale, in a place whence fruit can not be profitably shipped to general markets. We would not plant apples for drying alone. There will be so many apples dried as a by-product in our chief commercial apple districts

that drying as a sole recourse is not promising, although the price sometimes is very alluring. You might get a few crops of peaches in the way you state, but a few crops of low-growing vegetables would be better. Do not, however, do anything to rob your apple trees of their moisture supply. The apple grows slowly during a long season, and should find enough moisture constantly present. In California there is no choice of varieties directly for drying. All our popular varieties have a good, tart flavor and firm flesh, and these are good qualities for a dried fruit.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 27, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Heavy rains during the week caused some damage to drying fruit not stacked, grapes on the vines, beans and unbaled hay, but were beneficial to pasturage and other farming interests. Tokay grapes in the vicinity of Sacramento were considerably damaged and shipments will probably cease. Ample warnings were given, but orchardists in some places neglected stacking their prunes and will suffer some loss. Oranges are beginning to color and are in excellent condition. The heavy rains softened the soil, and plowing and seeding will commence as soon as practicable. The grain and hay crops are nearly all stored.

COAST AND BAY COUNTIES.

Considerable damage was done by the heavy rains during the week, principally to grapes on vines in the Sonoma and Napa valleys, but there was very little damage to drying fruits, as ample warnings were given. The rainfall was over 1 inch in the Santa Clara valley, 2 inches in San Luis Obispo county, and from 3 to 6 inches in the Sonoma and Napa valleys. Heavy shipments of apples are being made from San Jose, and there is a heavy crop of excellent apples in the vicinity of Peachland, Sonoma county. Large quantities of grapes are going to the wineries. Citrus fruits are doing well. Beans were not damaged by the rain. Grass is starting and green feed will soon be plentiful. Plowing and seeding will commence at once.

SAN JOAQUIN VALLEY.

Generally cloudy weather, with occasional showers, prevailed during the week. The rainfall averaged from $\frac{1}{4}$ to $\frac{1}{2}$ inch over the valley and there was quite a fall of snow in the high Sierra. The rain was very beneficial in putting the ground in condition for plowing and seeding, which is progressing rapidly. Ample warnings had been given of the approach of rain, and fruit dryers had their trays stacked; reports indicate that little or no damage will result. The second crop of grapes, which is quite large, is being gathered; the bulk of the crop will go to the wineries. Egyptian corn and sugar cane are being harvested. The mountain crop of apples is large and of fine quality. Stock of all kinds is in good condition. Many places report sufficient rainfall to start green feed.

SOUTHERN CALIFORNIA.

The rainfall was quite general throughout the south, and was beneficial to most farming interests, though probably causing some damage to walnuts. Raisin growers received ample warnings, and there was but slight damage to the crop, a small part of which remained on the trays. Orange and lemon trees were benefited, and at some places the soil was moistened sufficiently for plowing. Beans were not seriously damaged. Walnut gathering progresses slowly, owing to unfavorable conditions. Prospects continue good for a heavy yield of oranges. Pasturage was greatly benefited by the rain.

LOS ANGELES SUMMARY.—General rain Friday and Saturday. Some walnuts and beans injured, but warm weather following prevented much damage. Sugar beet harvest finished. Celery shipping begun; crop best in several years.

EUREKA SUMMARY.—Late crops progressing satisfactorily. Apple picking is well advanced. Potato digging has begun; prospects for average yield. Rain sufficient to put ground in condition for plowing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, October 29, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	1.66	2.64	6.75	4.32	66	50
Red Bluff.....	1.94	3.44	3.90	1.99	72	48
Sacramento.....	1.02	1.66	2.12	1.38	70	46
San Francisco.....	1.49	1.70	1.42	1.53	66	50
Fresno.....	.26	.40	1.15	.93	76	46
Independence.....	.08	.37	1.07	.58	70	38
San Luis Obispo.....	1.68	2.00	2.86	1.92	76	46
Los Angeles.....	.39	.39	2.00	.93	78	50
San Diego.....	.06	.96	.34	.51	72	52
Yuma.....	.00	.11	.22	.97	92	52

THE DAIRY.

Feeding the Dairy Cow.

By MR. T. J. STEPHENSON of Courtland, at the State Dairy Convention.

Realizing that the conditions of different States and of different localities necessitates different foodstuffs, and also a wide range in the manner of feeding, I have decided to confine myself entirely to local conditions, as practiced on my dairy farm, near Courtland. This dairy farm is in Sacramento county, about 21 miles south of the city of Sacramento and about 3 miles from the Sacramento river, and on the east side of the river, in Reclamation District No. 551.

THE SOIL.—The land is of two varieties: First, what we call high land, where formerly grew willows, cottonwoods and a few second-growth oaks, with a heavy underbrush of brier bushes. Since the land was reclaimed from overflow by levees, these higher lands become very dry during the summer months; they will produce a scanty growth of alfalfa and need resowing about every third year. Second, the lower lands: These are from 5 to 12 feet lower than the high lands. These low lands are an ideal place for the cultivation and growth, without irrigation, of that valuable food plant, alfalfa. It naturally follows that most of the food of my dairy cows is alfalfa, either as pasturage, silo or hay, or the alfalfa cut and feed green.

ALFALFA FOR FEEDING.—Under the heading of "Alfalfa as an Exclusive Dairy Ration," a writer in the Dairy and Produce Review of Sept. 4, 1902, says: "Owing to the difficulty many farmers experience in compounding balanced rations, an exclusive diet of alfalfa hay simplifies this question to conclusion devoutly to be wished for."

My own experience for the past four or five years proves to myself, at least, that alfalfa alone constitutes a balanced ration. I grow some barley hay each year, of which I make good use and of which I shall speak later.

ALFALFA CULTURE.—As the feed for my cows consists almost entirely of alfalfa, I think it will be well at this time to tell how I grow this feed.

First, as to the time of growing, I have had the best success by sowing the seed during the month of March.

Next, the preparation of the ground: Taking an old alfalfa field that needs resowing, I do not plow the land, for the reason that the plow cuts off the crown of the plant, and a new shoot or plant very seldom, if ever, starts up from the root again. But take the crown or head of the plant and bury it in the ground, and it will throw out new roots and new shoots, and make a vigorous plant. Instead of the plow, I use the right lap disc, putting four horses on a disc that cuts about 24 inches, the four discs being set 6 inches apart.

I cut the ground one way, cutting about 4 inches deep, setting the disc at only a slight angle, in order not to cut off the crowns of the alfalfa; then I cross the land with the disc in the opposite direction from the first cutting; then, again, I cross the land in the same direction as the first time. If the ground is in good tilth, and a fine seed bed by this third cutting, I stop the disc; if not, I cut it the fourth time. This is really a slow process, as it is equal to plowing the land once with a 6-inch plow. But it pays to use the disc. By the time the ground has been gone over three or four times with the disc, the crowns of the old alfalfa plants will be cut and sliced into many pieces. This is just what is needed by the old plant; it takes new vigor, and will grow better than a new plant, just as an old peach tree will throw out new branches, by a vigorous pruning of the old tree. By using the disc, instead of the plow, you save all of the old plants.

Next comes the seeding. I sow on the prepared land, first, about eighty pounds of barley to the acre. I sow the barley, not as a nursing crop, but to insure a crop of hay if the alfalfa should fail. Oats will not ripen with the first of alfalfa on our lands, but the barley does.

After the barley has been sowed, I harrow it in; then roll the ground with a roller or drag a clod-masher over it. Then I sow about thirty pounds of alfalfa seed to the acre, using a seed sower, such as is used in sowing wheat; then harrow the seed in with a common spike-toothed harrow; go over the ground with a clodmasher, then with the roller, and the field is finished. You need not go to it again, except to see if the crop is ready to cut.

This clodmasher of which I spoke is made by nailing 1x6-inch boards together, like the weather-boarding of a house.

FEEDING THE COWS.—During the months of December, January and February the cows are let into the barn about 3 o'clock P. M. each day, their afternoon feed having been placed before the stanchions during the earlier part of the day. This feed consists of about thirty pounds of silage, this silage being the first crop of alfalfa, and is a mixture of alfalfa, burr clover, alfalfa and foin, with some weeds, about one-half being alfalfa. In addition to this silage, the cows are fed all the alfalfa hay they will eat.

After the evening milking, the cows are turned

out of the barn, and they go to a field of about six acres for water, and another feed of alfalfa hay, which has been put from an outside stack into the feeding manger in the field.

The cows remain in the barn only during the time of the morning and afternoon milking, except when a cold rainstorm comes. Then I keep them up at night while the storm lasts. After close observation and many years experience I find that the health of the cows is better and they do better by keeping them in the open as much as possible. Give them all they will eat, at all times, and the rain will not hurt them. This turning of the cows out at night is practiced by all of the dairymen in my section.

In the evening, after the cows have been turned out of the barn, some hay is put in the mangers for

been left off so that the manger could be easily turned upside down, on a short bob-sled, when moving to a fresh feeding place.

The advantages of this measure are many. They are easily moved from place to place. They save the feed, keep it clean, since the cows cannot run over it; being 4 feet wide, the cows cannot throw the feed out; being low, they are easily filled from the wagon, and the cows can eat from them without getting fox-tail and other seeds into their eyes and ears.

I have twenty-five of these mangers in each field. I set them in a row and about 10 feet apart. I have a picture which shows the appearance of the mangers after they have been filled, and other views which show how readily the cows come to eat. They stand at the manger with much order and digni-

ty. Much of this orderliness is due to the fact that they have no horns. Since dehorning, they eat, drink and walk together and go into the barn or corral in orderly manner.

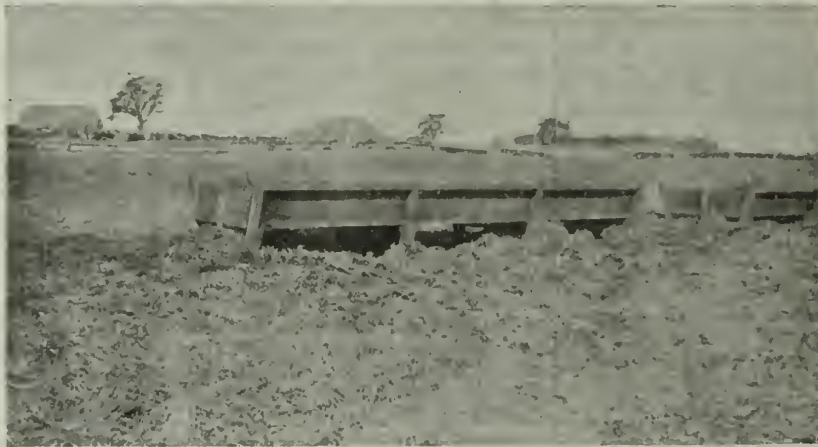
I have a view of the wagon used in the feeding. The frame of the wagon used in the feeding is 16 feet long and 8 feet wide, with a smooth floor, and no wheelhouses. The watering place adjoins the feeding fields. The cows have access to this watering place at all times of the day or night. The furnishing of an abundance of good water is of so much importance that it is hard to conceive how often it is overlooked or neglected.

During the month of March and a part of April, the cows feed on the pasture of alfalfa, foin, burr clover, alfalfa and rye grass, during the day; at night, they are fed alfalfa hay in the field. By the 15th of April the alfalfa is usually far enough advanced to make it profitable to cut and feed it to the cows, keeping the cows off the large fields and confined to the two small fields. I use two fields for feeding so that all the feed for both night and day may be put in the mangers during the morning and the feeding be finished by 12 o'clock noon.

CUTTING THE CROP.—From the 15th of April to the last of November the routine of feeding varies little. The alfalfa grows rapidly, and it is an easy matter to arrange the cutting so that it can be cut when it is of the greatest food value. This will be when the flowering period of the plant is about one-fourth advanced. There will be some flowers open, but most of them will be just ready to open. The color of the field will have changed from a vivid green to a bluish green. If cut before this period the alfalfa will bloat the cows; if cut when fully in flower it will have become woody and have lost much

of its food value. If I find, at any time, that the alfalfa will be too old before it can be cut for feed, I have all the field cut out and made into hay, and feed this hay to the cows for a few days instead of the green feed. The change does the cows good, and the hay, cut at the right time, has a much greater feeding value than overripe green stuff. After the first time of cutting over the fields, however, there will be no trouble in having a supply for cutting as it is needed, as the fields will then lie in steps, as it were, as to advancement in growth, and that cut first, in four to six weeks, will be ready to cut again.

Now as to the method of feeding this green food: When we are ready to begin cutting, after the morning milking is done, one of the milkers goes to the field with the mowing machine, and cuts enough for twenty-four hours' feed; then he unhitches the team from the machine, and hitches up to a two-horse rake, and rakes the stuff into small windrows. These



Mr. Stephenson's Feeding Mangers in Position for Use.



Feeding Manger Tipped Up to Show Method of Construction.



Mangers as Filled for Feeding and the Dehorned Stock.

them to eat while they are being milked the next morning. Immediately after the morning milking, the cows go to the little feeding field where hay is put into the mangers for them, and the cows eat all they want until evening. I feed no grain, or squash, or roots, or corn. This way of feeding is practiced daily during the months of December, January and February.

I have small views of the field mangers, which will help me to explain their construction and use. These mangers are 16 feet long, 4 feet wide at the floor, and 1 foot high from the floor to the top. The length of the legs, from top of manger to ground, is 2 feet and 7 inches. It is 5 feet 3 inches wide at top, 3 feet and 9 inches where the legs stand on the ground, all outside measurements. The legs, railing on top, and cross braces are 2x4 pine; the floor, sides and ends are of 1x12 redwood. There is no brace lengthwise at the bottom of the legs; this has

windrows are necessarily small, for the reason that there is no wire-tooth rake in the market that will stand the strain put upon it when raking this fresh-cut alfalfa and make windrows more than from 12 to 16 feet apart. These windrows are then made into small bunches, by hand with pitchforks, putting the width of three swaths of the mowing machine into one bunch; this leaves room for the wagon to be driven between the rows of bunches, and the wagons can be loaded from both sides at the same time, and no man is needed on the wagon.

DISTRIBUTING THE FEED.—After the wagon is loaded it is driven to the feeding field, and the load is put into the mangers. The cows are ready for it, having been turned directly from the milking corral into the field. Two loads of green feed, not weighed, but estimated to be one and one-half tons, is enough to feed 150 cows during the day of twelve hours. Two loads of green alfalfa and a small load of hay are then put in the other feeding field, for the night feed, and the cows go to this after the evening milking. Each cow will consume from 80 to 100 pounds of fresh-cut alfalfa in twenty-four hours.

SUPPLEMENTAL FEED.—At times during the summer the cows become cloyed, and refuse to eat the green feed. A change then becomes necessary and it is here that I use the barley hay that is grown on the high land, and also the barley hay that is grown with the first crop of newly sown alfalfa. Barley hay, fed alone, is a very poor milk-producing food, but fed in connection with fresh alfalfa, it answers a very good purpose. Wheat, barley or oat straw would answer as well as barley hay. A continual diet of the fresh green food alone makes the bowels too loose, causing scours. Feeding the cows for two or three days on the freshly made hay, of which I have already spoken, will correct this, but usually it is only necessary that the cows have the barley hay in small quantities, with the green feed, and the trouble will be prevented. The cows will eat the dry hay or straw with relish; their systems seem to need it.

PRECAUTIONS.—There are two things to which I wish to call your attention: the first is, that if the alfalfa is cut too green it will bloat the cows, just the same as it would if they ate it in the pasture. To prevent this, let it lie in the swath and cure for a day; it may then be fed without any danger. The alfalfa, no matter how fed, will not cause the cows to bloat if it is in the flower.

The second is, that a load of fresh-cut alfalfa should not remain for any length of time on the wagon, because it would heat. A load of it would get so hot in twelve hours that it would be unfit for feed, and should the cows eat it in that condition it would make them sick.

In the arrangement of feeding on my place, I use two two-horse wagons, two horses for the rake and mowing machine, making six horses in all. The men who do the milking do all of the feeding.

With only a few slight variations, I have followed this plan of feeding for more than ten years. The addition of two silos to my feeding arrangements was made last year, and I used them for the first time last winter. I expect some good results to follow from the use of these silos.

The advantages of following this plan of feeding are two-fold: First, I am enabled to feed the green alfalfa just at the time that it has its greatest nutritive value. Second, the cows can be kept off the larger fields, and so avoid injuring the plant by trampling. Especially will the fields of young alfalfa be injured in this way. The cloven hoof of the cow splits the crown of the plant, and during our dry summer the plant so split and crushed makes a very poor growth or dies out entirely.

PROFIT IN DAIRYING.—The question may be asked: "Do you find the dairy business a profitable one?" The profit in the dairy business is governed by the quantity, quality and price of foodstuffs, by the kind of cows kept and the amount of good judgment of the owner or manager. With an abundance of good, cheap food, such as we have in the alfalfa grown in our river sections, there is no reason why there should not be a profit in the dairy business, if only good judgment is used.

The number of cows in my dairy will average about 175 milking daily throughout the year. They are bred so that there will be a few fresh cows each week during the year. The foundation of the dairy stock were cows brought by my father across the plains from Missouri in 1853. He established a dairy on the farm where I now live, and in 1880 I took charge of this dairy. Since then I have made dairying my business. My cows have been bred up from common stock, and are now one-half and three-quarters Jerseys. I use the best-bred bulls I can procure of the Jersey breed.

THE POULTRY YARD.

Treatment for Chicken Cholera.

Several complaints of the prevalence of chicken cholera, says Orange Judd Farmer, have reached us with request for a remedy. This is a highly contagious disease affecting all poultry and is caused by bacteria. The infection occurs by taking food or drink contaminated by the excrement of sick birds,

or even by inhaling the germs floating in the air. It may run rapidly through a flock, destroying a large portion of the fowls in a week, or it may assume a chronic form, spread slowly and be troublesome for weeks or even months. The earliest symptoms are a yellow color of the urates or excrement, secreted by the kidneys, followed by loss of appetite. The bird separates from the flock, the feathers become rough, the wings droop, the head is drawn toward the body and the fowl becomes very weak and sleepy. These symptoms are usually accompanied with a high fever and intense thirst. The disease lasts usually about three days.

Medical treatment is of little avail. A dessert-spoonful of a solution of one dram carbolic or hydrochloric acid and one quart water for adult birds is recommended. Affected birds should be isolated and the greatest dependence placed on a thorough disinfection of the premises and on sanitary precautions. Give a thorough cleaning to the houses, yards, and whatever ground the poultry frequents. For disinfecting, sulphuric acid is the cheapest, but it is extremely dangerous to use, as it burns severely if it touches one's flesh or clothing. One pound to fifty quarts water is the right proportion to use. Pour the acid slowly into the water in a wooden vessel, as it creates considerable heat in mixing. Sprinkle the weakened acid freely around the hen house and on the ground frequented by the poultry. Thoroughly cleanse the drinking and feeding vessels and keep them clean. Persistent and heroic measures are necessary to get rid of cholera when once it gets into a flock.

FRUIT MARKETING.

Distribution of California Fruits.

By A. H. NAFTZGER, President of the California Citrus Fruit Exchange, at the Farmers' Institute in Southern California.

Probably in no other class of products from the soil has there been so great increase in volume in recent years as in fruit growing. The shipments from California orchards alone have increased from 16,000 carloads in 1890 to more than 66,000 carloads in 1900, an increase of more than 400% in ten years. The census reports are not yet complete, but the advance bulletins indicate a similar increase in fruit growing in every part of the country. As for instance, Delaware shows a marked increase in everything except peaches, ranging from an increase of 40% on cherries up to nearly 1400% in prunes and plums. It is true that the plums and prunes in Delaware are still in limited quantity, although the increase was more than 7000 bushels. During the same period the increase in pears in that State was more than 130,000 bushels. Look at the comparative figures of the colder State of Connecticut. During the decade the number of bearing apples increased nearly 50%; cherry trees, 60%; peach trees, 489%; pear trees, 43%, and plum and prune trees over 1200%. Like Delaware, some of these products are still in limited quantities, although the increase is marked. Fruit growing has been stimulated by the genius of the people in seeking new lines of profitable industry, but more particularly by the consumptive demand for fruit. The luxuries of a few years ago have become the necessities of to-day. With a very large percentage of our population no breakfast, luncheon nor dinner table is complete without fruits in some form. There was a time when the delicious products of the tree and vine were sought for by the rich to the remotest corner of the earth, even at great cost, but with the vast increase in production these fruits must seek new markets, and not wait to be sought for. Notwithstanding the superiority of California fruits over most others on the globe, the vast increase in the industry in every direction causes the California grower to stop and inquire what of the future.

WHERE TO FIND CONSUMERS, AND HOW.—The distribution of fruits is but another term for marketing, and I take it the committee so regarded it in assigning me to the subject. Thousands of growers in California have found that they can overcome all difficulties and grow the finest fruits the world has ever known, but how to convert them into money at profitable figures is the ever-present problem. From year to year they find that they must have more consumers. These must be created. How to do this fast enough to keep pace with the increasing product is a question that will tax the skill of all the growers. That every pound of fruit grown in California could find a market profitable to the producer if properly brought to the attention of consumers there can be no doubt. I am not prepared to admit that we have reached the limit of profitable production, not to say anything about the so-called overproduction. What we want is an orderly distribution of our fruit into the markets we have, and the education of consumers to require more of it. As I have said in this convention before, people buy things because they see them, and because they are presented in an attractive form. Some method must be devised by which these cured fruits, prepared in the very best manner, are put on exhibition and sold in every city and village over the country. Thousands of people who seldom

if ever buy California raisins, prunes and other cured or fresh fruits would become regular consumers of them if they were carefully brought to their attention in attractive form, and at prices which would net the producers handsome profits. Furthermore, the people must be educated by making them acquainted with the delicious and health-giving qualities of these fruits. They must be brought to the attention of the housewife, the steward or the cook as the case may be, day after day. As to cured fruits, I should say the plan of putting them up in small, attractive packages, ready for market, a most excellent one, provided the necessary machinery for distribution of them is put in motion. And every one of these small packages should be accompanied by some formulas for preparing for the table, or some short crisp statements regarding the character of the fruit, its good qualities, etc. It may be necessary even to systematically carry these packages and sell them at the doorstep.

MUST CREATE DEMAND.—It is perfectly evident that we cannot depend upon a spontaneous demand; we must create one. Neither can we depend upon the usual channels of trade for the proper exploitation of the markets. Nobody except the man whose sweat and toil produced the fruit has enough vital interest in the product to push it constantly into consumption, unless he is paid for doing it. People in trade will devote their energies to the article that is easiest to sell, and the moment demand for any particular article weakens, they turn their attention to something else, out of which a more ready profit can be obtained. There will follow a period in which the particular article neglected is not consumed in necessary quantities. We cannot wait for people to buy our fruits as they buy flour and meat and shoes—simply of necessity. We must educate them to require our products all the time, because they have a taste for them.

But, you ask, how can all this be done? It involves vast detail and the expenditure of considerable money. It will surely be done if it can be made to appear that it will pay, but the individual grower cannot do it. He cannot afford to do it on his own account, nor can he afford to employ agencies to carry his product and put it before the people in the way suggested. Paradoxical as it may seem, I will therefore say that the best way to distribute our fruits is to get them together. First, the interests of many growers must be consolidated. If you have grown weary of the word co-operation, let us call it by the more modern term of "community of interest."

It is true that the individual grower who packs his own product for market could place in every package some suitable advertising matter that would interest the consumer into whose hands it might fall, and probably have the effect to cause him to buy more of the same fruit; but even this form of advertising and educating the buyers can be carried on much more systematically and successfully by the co-operation of the many. I have no doubt that the many thousand small packages of seeded raisins given away by the people of Fresno to visitors at the Pan-American Exposition will have the effect to make thousands of new customers for their seeded raisins. I do not pretend to be familiar with the methods adopted for doing this work of distribution, but it probably fell so lightly upon the many parties at interest that no one felt the expense.

ADVERTISING LEMONS.—Last year the Southern California Fruit Exchange had printed half a million circulars setting forth the good qualities of the California lemon, both for table and toilet; also many formulas for the use of the lemon. These circulars were distributed by putting them into the boxes as they were packed for shipment. The cost of this to any one grower among the hundreds who bore the expense was so slight that it was a burden to no one. These are but suggestions of the ways that could be employed for disseminating information and creating interest in the superior qualities of our fruits. Not offering spasmodically; not waiting for the consumers to call on the retailers and they in turn to go to their jobbers and demand these fruits, but we see to it that they are always in their proper season in the hands of the jobbers, and if they are dilatory about it we must go past them to the retailers. If, however, there is a demand upon the part of consumers, jobbers will be very willing to handle them. It is difficult, if not impossible, to estimate the great damage and loss that will ensue if the interest in any of these fruits is permitted to lag during the proper season. People will not eat twice as many prunes in January because they did not eat any in December. In fact, if they are permitted to neglect the prunes in December, and become accustomed to some substitute, it may take half or all of January to get them back to prunes. The work of advertising which I have suggested in the way of circulars, formulas, etc., must be supplemented by personal effort. I do not ignore, nor do I think I underestimate the value of ordinary channels of commerce, through which any commodity is placed upon the market, but I am thoroughly convinced that these usual channels are not sufficient for our uses.

HOW TO SELL.—As I have already stated, brokers, jobbers, retailers and speculators, like the forces of nature, work along the lines of least resistance. In other words, they devote their attention to the thing

easiest of accomplishment. Having no particular interest nor investment in the production of fruit, they will deal with it precisely as with any other commodity. They will sell it when there is a demand for it, and neglect it when the demand weakens. As a consequence any one or more fruits may any time disappear from the market for an indefinite period. Something else, or even nothing, may be substituted for it. This leads me to say that, in my judgment, if fruit growing in California is to be permanently successful, we must sell our products through agencies of our own. As President Bond of the Cured Fruit Association said in his annual report: "I would have the Association sell its fruit through its own agencies." So thorough is my belief, gained by observation and experience, that this is of prime importance, that I place it ahead of all other factors in the problem of distribution. If we want work done, we must go or send. Every other great business undertaking is exploited by personal and executive representatives. Where is there another industry of so vast extent as fruit growing in California that attempts to put its product on the market through agencies established for other purposes, or with mixed interests? It has been stated upon the floor of this convention that the fruit products of California have reached the enormous valuation of \$25,000,000 in a single year. Will any grower attempt to maintain that this is not sufficient reason to justify the maintenance of the most thorough system of distribution? A very small percentage of this great sum would girdle the earth with the best talent obtainable, devoted solely to the introduction of California fruits. This will separate the work of marketing from adverse influences; it will eliminate speculative figures; it will establish permanent channels through which supplies reach the consumer; it will equalize distribution; it will reduce operating expenses; it will strengthen and steady prices. I have yet to hear what I deem a sound argument against this method.

CO-OPERATION NECESSARY.—If you will excuse what may seem somewhat personal, I will say that the Southern California Fruit Exchange has its own offices in thirty of the principal cities of the United States. Salaried agents and assistants in these offices are constantly keeping our fruits before the attention of the jobbers in all of these cities and adjacent territory. In fact, by this method we cover every jobbing city in the United States and extend into Canada and Europe. Through these agencies we are marketing half the citrus products of California satisfactorily to the growers, and to a large degree steadying the markets for the other half. These agencies are engaged exclusively continuously in the sale of California fruits. They are not talking oranges to-day, bananas to-morrow, baking powder the next day, and so on; but are incessantly urging our fruits upon the attention of the jobber and the wholesaler, and, if he should show indifference to them, they go to the smaller and country merchants with them. During the year since the last meeting of this convention, we have sold through these agencies over 11,000 carloads of citrus fruits for nearly \$9,000,000. In addition, we have sold for other co-operative organizations, some hundreds of carloads of California products. This we have done at a cost of but 3% to the grower. We transacted this large business without the loss of a dollar from bad credits. Covering a period of five years, and the sales of \$22,000,000 worth of fruit, our total losses from bad credits have been one-fortieth of 1%. These facts and figures are cited to show you the method I advocate is practicable, and can be carried into successful execution. It is not a dream.

Pardon me for repeating what I have said frequently before in these conventions; that California fruit growers ought, and I believe must, establish control and maintain their own agencies for the distribution of their products, kept free from the shifting influences of speculation. This must have for its sole purpose and object the interest and success of the individual grower. These agencies, dominated alone by and for the fruit growers, must be the ever open doors through which the products of our orchards shall be borne in steady, but well regulated stream, into every market of the world. All of this can be done by a combination of all, with small cost to all. It cannot be successfully accomplished without combination.

AGRICULTURAL ENGINEER.

When Does a Road Become a Public Highway?

The Supreme Court of California has just rendered a decision which clears up the subject of owners' or the public's interests in land used as a roadway. The decision is by Judge Garoutte and is concurred in by Judges Harrison and Van Dyke, and, in full, is as follows:

This action was brought to restrain the defendants from obstructing a road which plaintiff alleges was a public highway. The court found as a fact that the road was a public highway, and granted the relief asked. The appeal is taken from the order denying a motion for a new trial. Some point is made that the road is a statutory private road; but, in view of the fact that it was never opened and laid out in ac-

cordance with the provisions of the statute relating to the laying out of private roads, there is nothing in that point. The single question presented relates to the sufficiency of the evidence to sustain the findings of fact.

The evidence in all substantial is uncontradicted. Weighing that evidence in the balance furnished by the law, the court is convinced that it fails to support the finding of fact to the effect that the road was a public highway. The evidence of plaintiff is all to the effect that the people generally had used the road in dispute for fifteen years or more to the knowledge and acquiescence of the defendants—the original owners of the land upon which the road is located—and this is all. *Cooper vs. Monterey Co.*, 104 Cal. 438, was just that kind of case, and there the court said: "The finding that the strip of land in question was traveled and used by the public ever since 1872, with the knowledge of plaintiff and without objection on his part, is only finding of probative facts tending to prove a dedication; but the fact of dedication, which by the way is neither alleged nor found, does not necessarily follow these probative facts, since they are not necessarily inconsistent with a total absence of intention to dedicate, and may indicate merely a license. The finding that the strip of land 'is a public highway,' whether deemed an ultimate fact or a conclusion of law, is not justified." In the same case the court also said: "The evidence on the part of the defendant was sufficient to justify the finding as to the user by the public with the knowledge of plaintiff and without objection from him, but nothing more in favor of defendant. As this finding is obviously insufficient to support the judgment, I think the order and judgment appealed from should be reversed."

While the court finds a statement in *Hope vs. Barnett*, 78 Cal. 14, which might be construed as supporting the doctrine that the mere user of a highway with knowledge of the owner, and with his consent, or without objection upon his part for a certain period of time, creates a dedication, yet such cannot be said to the law in this State. Dedication is a question of fact. The intention of the owner to dedicate is a vital element in every case, and that intention also is a pure question of fact. A mere permissive user by the owner of land for a highway never can amount to a dedication—that is, a user by license and nothing more and of itself can never ripen into a dedication, no matter how long continued. An expression is found in *Schwerdtle vs. County of Placer*, 108 Cal. 596, to the effect that a conclusive presumption of dedication to the public arises from the long-continued adverse user. Technically speaking, this statement does not contain a sound expression of the law. Long-continued adverse user by the public may create an easement in that public by prescription, but it cannot amount to dedication. It is not plain that the user of a highway by the public could be adverse, if the owner consented to the user, and dedication always involves the assent of the owner of the land. If he objects to the use, if use is against his assent, that fact disproves any intention upon his part to dedicate. It is said in *City of Los Angeles vs. Kysor*, 125 Cal. 465: "In all those cases where it is claimed that a dedication is created in pais, it may be said that there is no amount of evidence which will justify a court in instructing a jury that dedication is conclusively shown. The owner's intention is the all-important element in creating a dedication, and that intention is a question of fact. It can never be a matter of law. Hence, when the presence of the intention in doing an act is the all-important element involved in the trial of a question of fact, it is peculiarly the province of the jury or the trial court to say what that intention is."

A dedication of land for highway is an appropriation of it by the owner for that purpose. It is perfectly evident that the appropriation of the land by the public is not a dedication; and to justify a finding of fact by a trial court that the owner has dedicated his land to public use as a highway, the evidence must be plain and convincing that such was his intention.

It is said in *San Francisco vs. Grote*, 120 Cal. 62: "It is not a trivial thing to take another's land without compensation, and for this reason the courts will not lightly declare a dedication to public use. It is elementary law that an intention to dedicate upon part of the owner must be plainly manifest." While long-continued user without objection, and with the knowledge and consent of the owner, is some evidence of a right in the public, still there must be joined to that user an intention upon the part of the owner to dedicate, or no dedication will be consummated, for the long-continued user by the public without objection by the owner is entirely consistent with a license from him to the public to use the land, and, therefore, evidence of long-continued user alone will not support a finding of fact that a dedication was created. Neither will a finding of fact of mere long-continued user support a conclusion of law that a public highway was created. As previously stated, in order to constitute a dedication of a highway by evidence in pais, there must be convincing evidence that the owner intended to appropriate the land to public use.

The present case shows mere user by the public for a long number of years. The evidence does not amount to a dedication; but beyond this, the evidence

of the defendants shows clearly that they never intended to dedicate the lands for public highway. For many years the road was obstructed by gates, and during all of these years they exercised acts of ownership over it entirely inconsistent with an intention upon their part to dedicate it to the public. They spent large sums of money annually in improving it, and the county whose business it was to care for and improve and protect its public highways during all of these years never claimed any rights in this road, and is not now a party to this litigation. The court concludes that the evidence is too weak to support a finding of fact to the effect that the land in dispute was a public highway created by the dedication of its owners.

Some claim is made that the public has obtained rights to the road by prescription. There is nothing in this claim. Time of user is not material element in creating a dedication of a highway; but for the public to acquire an easement in land by prescription for a highway, it is a most material element. Yet continued user by the public for the statutory period of limitations is not sufficient to vest rights. As in all other cases of title acquired by prescription, the user must be adverse. A permissive user will never ripen into a right by prescription. In this case there was no adverse user and no claim of right that this court can discover from the evidence. Certainly, defendants never thought the public was claiming a right in this land adverse to them. They saw nothing to put them upon inquiry as to that kind of a claim. The claim of right, as in all other cases of adverse possession, must be open and notorious, and here was nothing of the kind.

THE FIELD.

Alfalfa in the Lodi Region.

Mr. J. W. Brier of Lodi has prepared a statement for the Herald of that town which will be of interest to alfalfa growers everywhere. He says: Alfalfa is especially suited to the region of which Lodi is the business center. The soil is of such a quality that it is easily irrigated—taking no more water than is required—and it responds immediately in a rank and rapid growth. Alfalfa requires a warm and loamy soil and a temperate climate, with plenty of water applied once for every crop excepting the first. Under such conditions, it can easily be cut five times during the year.

The quantity of hay actually cut and cured on ten acres in this vicinity will be a surprise to most people. I am able to speak with close accuracy to this point, having taken some pains to inform myself and having had a little experience during the season about to close.

Mr. Norton, who lives on Cherokee lane, about 4 miles from Lodi, has, I believe, a fraction over ten acres, watered by the work of three windmills and six pumps. The yield of five crops last year was about 120 tons of hay. A sixth crop reached a two-thirds growth and was fed green.

Mr. Harney, who owns a farm near the same thoroughfare, cured about sixty tons on five acres, also watered by windmills and lifting pumps.

The lands of these gentlemen are probably neither better nor worse than other lands all about them. The amount yielded by them is not in excess of a fair average under equal opportunities.

Lands irrigated by the work of gasoline engines may have a better, more timely and valuable supply of water. Under the irrigating canal, land may be expected to break the record, because the water is every way more advantageous.

The cost bill from start to finish may be stated, approximately, as follows:

Ten acres of land.....	\$800 00
Cost of leveling and sowing.....	75 00
Cost of water.....	25 00
Cost of cutting and raking five crops.....	25 00
Cost of curing and irrigating.....	30 00
Total.....	\$935 00

Alfalfa is worth \$4 per ton in the shock. This secures an interest on your investment of 40%. When put into hogs and cattle, alfalfa is worth three times as much as when sold in the field at \$4 per ton.

There is no way of making money that is more certain, easy and agreeable than by raising a large crop of alfalfa. It is good for the man of small means and good for the man of large means. It beautifies the country, calls attention to it, and imparts an air of cheer, comfort and opulence, to be found only in a land of meadowy landscapes flecked with kine.

HORTICULTURE.

Pomegranate Growing.

Ulpiano Del Valle, manager of the Camulos rancho, in the lower Santa Clara valley of Ventura county, has been experimenting with pomegranates on an extensive scale, and is now, according to the Los Angeles Herald, introducing his first crop, which amounts to more than 1000 boxes. Under favorable conditions, he expects to increase this output to 2500

boxes next season. The claim is made for the Ventura variety that the fruit is larger and in every particular superior to that grown in any other section of this State, and it commands a ready sale at advanced prices. These results are the effect of close study of soil and climatic conditions and a selection of varieties, coupled with intelligent cultivation.

The successful marketing of this season's crop has demonstrated that the pomegranate is rapidly growing in popular estimation as a fruit product, and that the profits are in excess of what was looked for when the experimenting began.

Mr. Del Valle states that his experience has demonstrated that the growing of pomegranates can be made one of the most profitable of fruit-growing enterprises. He proposes to plant extensively this fall on that portion of the Camulos rancho where orange and lemon culture has failed along profit-bearing lines. So far as known, the Del Valle rancho is the largest producer of pomegranates in this State.

Agricultural Review.

ALAMEDA.

MILLING WHEAT.—A letter from Prof. Hilgard to the Livermore Herald, says that samples of wheat raised in the Livermore valley and near San Luis show strong maintenance of a large percentage of gluten.

BUTTE.

A WORD FOR ALFALFA.—Chico Record: A grower of alfalfa who has been in the business for twenty years sums up the merits of this plant as follows: First, its feeding value in the form of hay is far superior to that of any other, and nearly equal to corn, pound for pound; second, its yield per acre is much greater than any tame grass; third, it combines excellent pasture with its value as hay; fourth, it is one of the best possible fertilizers of the soil; fifth, once established in the soil it will last indefinitely; sixth, a ton of well cured alfalfa hay contains almost as much protein as a ton of wheat bran, and is worth for feeding almost as much.

COLUSA.

IN THE RAIN.—Sun, October 21: This has been a good season, but owing to the fact that help enough could not be had, even at extra high prices, there is now lying out at least \$25,000 worth of prunes in this immediate vicinity that it was impossible to house.

KINGS.

A JAPANESE JUBILEE.—Hanford Journal: On the 3d of November the Japanese will celebrate the occasion of the imperial birthday with wrestling, music, etc., at the baseball grounds from 1 to 5 o'clock in the afternoon. In the forenoon there will be speech making in Baker's hall. Japanese are invited.

LOS ANGELES.

FOREST RESERVATION OR LAND SCHEME.—J. B. Bledsoe is circulating a petition at Los Angeles and elsewhere in southern California against the United States Government setting apart 200,000 acres in southern California as a forest reserve, claiming that such movement is backed by a syndicate which owns the land, has found it worthless and wants to sell it to the Government at a price which will enable it to clean up about \$500,000. At least 500 houses are standing on the land, it is said, showing that much of the land was once sold to settlers and abandoned by them because of too much alkali.

MERCED.

TOURNAMENT.—Pasadena has already begun planning for her next Tournament of Roses on January 1.

A RAILROAD TO YOSEMITE.—The survey is being made for a railroad from Merced to Yosemite Park.

EARLY ORANGE SHIPMENTS.—Covina Argus: October 18 the Fay Fruit Company packed and shipped from Glendora the first car of Washington navel oranges to be sent from here this season.

LANCASTER HONEY.—The Pacific Honey Producers of Los Angeles purchased 515 cases, two carloads of amber honey of Nic. Cochem, paying 5½c delivered in Los Angeles. Mr. Dennett, the buyer, says that there is only 10% of a crop in the southern part of the State this season.

SACRAMENTO.

EXHIBITING ITS FRUIT.—Record-Union: The exhibit of California products which is being made at Ogden by the Sacramento Chamber of Commerce will be

augmented by sixty-five jars from the fine display recently made at San Francisco.

SAN BERNARDINO.

REDUCED FREIGHT RATES.—The Santa Fe has announced that during the coming season it will haul lemons for \$1 per 100 pounds instead of \$1.25, as last season.

A RIALTO SWEET.—D. D. Boyce of Rialto raised a sweet potato this year that weighed seven pounds. He deposited it in the San Bernardino National Bank for sightseers.

WHITE QUAIL.—Oscar Gregory succeeded in winging a white quail Sunday afternoon, making the second of these birds shot in this locality within the last two weeks.

DIRECT CONNECTION.—A number of orange growers of Redlands have formed a company and will take personal charge of the sale of their crops this season. The West American Fruit Co. will do the packing.

BEETS AT CHINO.—There have been sliced this season at Chino 60,000 tons of beets and 30,000 tons yet remain to be worked up. More than \$100,000 was paid to the farmers for their September deliveries of beets.

IRRIGATION FROM BELOW.—During the past year nearly fifty houses have been pulled into Riverside from the rural districts, mostly from Moreno and Alessandro, and a few from Perris, for lack of surface water; but there is now a movement for irrigation from wells.

MORE DIRECT CONNECTION FOR MARKETING.—San Bernardino Times-Index: The Rialto Orange-Lemon Association has filed articles of incorporation for the purpose of "packing, shipping and marketing citrus fruits and other commodities for its stockholders and others." The same men, with the addition of others, have also incorporated the Rialto Warehouse Co., capital stock \$3500. The incorporation of these two companies is of more than passing importance, owing to their obvious connection with the Big Four Orange Co. of Riverside, which is capitalized for several hundred thousands, and has already acquired hundreds of acres of orange land about Rialto, one of the great lemon growing sections of the State, and now to be pushed to the front as an orange producing region.

SAN DIEGO.

HOW ADOLPH LEVI BOUGHT THE CATTLE.—A good story is circulating about San Diego concerning a recent venture of Adolph Levi in a cattle deal. A rancher at Del Mar notified Mr. Levi that he had some cattle for sale. Scenting a bargain, Mr. Levi went out immediately. The rancher had also notified A. G. Nason, who has an equally good olfactory nerve. As luck would have it, the two met at the rancher's home at the same time. The latter, seeing them together, became confused and did not know what to say. Mr. Levi, being master of the situation, proposed that each one write out his bid on a slip of paper, and the one that was the highest should have the cattle. The ranchman agreed, but stipulated that no bid would be accepted which was below \$30 a head. The others gave their assent and wrote out their bids. Mr. Nason's was the first one read and was as follows: "I bid \$31.85 a head. Nason." Mr. Levi's read: "I bid two bits more than Nason." According to the agreement Mr. Levi got the cattle.

SAN JOAQUIN.

NEW BRIDGE.—The new \$4000 steel bridge at Lockford is completed.

RACEHORSES AT LODI.—Twenty-five racehorses are in winter quarters at the Lodi racetrack. All the stalls are filled and some of the owners have rented barns near.

FARMERS' TELEPHONE LINES.—Record: Within one week Stockton will have three rural telephone lines in operation within the city. The three lines will extend out 8 or 10 miles in a different direction. The Lodi system has headquarters at Stockton, saving connection fee of 25 cents a message.

SUPPLIES FOR SANTA FE.—Independent: E. T. Plowman, purchasing agent of all the eating establishments along the line of the Santa Fe railroads and also the diners in use over that system, recently made several large contracts for produce, butter, eggs and provisions to supply the cars and restaurants west of Albuquerque. Stockton dealers have been given the preference for months, as Mr. Plowman says they deliver good goods all of the time.

ANOTHER ELECTRIC POWER CO.—Stockton is to receive the benefit of another large power company that will have its plant located at Lake Eleanor, near the headwaters of the Tuolumne river. It is to be one of the largest and most expensive power and electric sys-

tems on the Pacific coast, to cost, it is said, \$26,000,000 for construction. A. J. Hechtman, vice-president Porter Bros. Co., fruit buyers and commission men, is largely interested.

LODI FRUIT SHIPMENTS.—Sentinel: Shipments of table grapes are practically ended. In all there have been a trifle over 300 carloads sent out, bringing growers about \$300,000, of which \$50,000, it is said by dealers, were for shipments by express. Mason Bros. shipped ten carloads of almonds and eight carloads of dried fruit, which brought to Lodi \$36,000. Mr. Bauer of the West Winery states that up to this time over 2000 tons of grapes have been brought to the winery, netting growers \$36,000, making a grand total of over \$372,000 paid to the grape and fruit industry of Lodi and vicinity.

TOO MUCH SULPHUR.—Stockton Record: "Local almond growers are losing money this season on account of their lack of knowledge as to the sulphuring of the nuts," says M. P. Stein, the merchant. "Many of the local growers sulphur the nuts too heavily and before the kernels are perfectly dry. This makes the nuts rancid. A large part of the crop, so far marketed, showed that the soil had been carelessly cultivated, the nuts being small and shriveled. Almond growing is in its infancy in this section, which accounts for the fact that the Davisville growers, being more experienced, produce better nuts."

THE PRODUCERS' ASSOCIATION.—J. B. Meloche, representing in southern California the San Joaquin Producers' Association, having its headquarters at Stockton, has disposed of quite a number of carloads of potatoes. Headquarters for southern California have been opened in Los Angeles and all of the trade in that section will be handled through that office. In the course of an interview in the Los Angeles Herald recently, Mr. Meloche said: "The Association does not aim to control the production, but it will endeavor to control the marketing of the products of the farms, to the exclusion of the middlemen, who, the farmers say, heretofore have taken all of the profits, leaving the producers nothing but the uncertain gratification that they are doing something to save the world from famine. The crop of potatoes to be marketed is estimated at 780,000 sacks. Beans and onions, also, are ready to be marketed, and will be handled in the same manner. Fruit, as well as vegetables, will be handled by the Association. The Association will guarantee the quality of all products of the farm that are handled through its agencies. The Association expected to begin sending out a large number of cars the first of this week and thereafter make heavy shipments every day." Through its agencies, the Association will be in possession of knowledge of the state of markets. San Joaquin county claims a larger crop of beans in proportion than other sections of California have this year.

SAN LUIS OBISPO.

FAIRS AND ASSOCIATIONS.—Arroyo Grande had a good fair this season, and expects the help of an appropriation to have another next year. The Park Association, of Paso Robles, is now fully organized and incorporated. The main object is to erect a large pavilion for fairs, meetings, etc.

SANTA CLARA.

SAN JOSE'S PROSPERITY.—The shops of the Southern Pacific will be removed from Salinas to San Jose.

PRUNE ASSOCIATION RECEIVERSHIP.—Over 2000 votes for the proposed receivership committee, headed by C. W. Childs, had been received to and including October 27.

MORE MODERN HIGHWAYS.—A route for the San Jose, Saratoga and Los Gatos Electric Railway is being surveyed. Every effort will be made to have the cars in operation by May 1, 1903.

A GROWING SECTION.—The freight business at Campbell shows an increase of one-quarter million pounds during the first half of this month over last year. For the same time the ticket sales have increased three and one-half times.

SAN JOAQUIN AND SANTA CLARA VALLEYS.—The building of 2½ miles of road in Santa Clara county would connect these two valleys by wagon road via Mount Hamilton, and E. P. Newhall of the Summit mine is trying to get the Santa Clara supervisors to build that.

APPLE SHIPMENTS AND MARKET.—The English market is better at the present time for apples than it has ever been. The shipments are very heavy at present and those in a position to judge say the demand is by no means supplied. The continent of Europe is also short on apples and heavy orders are expected from there. Over twenty cars of apples grown in this county and the Pajaro valley have gone east within the past week.

The crop is not quite as heavy as last year, but the quality and size of the fruit is first-class.

WATER COMPANY EXTENSION.—Mercury: It has become apparent that the Spring Valley has been the principal in every water scheme connected with the streams of the eastern ranges making the eastern border of the Santa Clara valley, and that the various syndicates and companies which appeared in the transaction were, in reality, no more than agents in its employ. It is impossible to realize the value of the holdings which it has acquired. Reservoir sites have been sold for a ridiculous price by unsuspecting owners. Rights of way for pipe lines and flumes were freely given months and years ago. In this way it has secured every inch of water in the eastern range, and its plans are now being developed. Active work is already under way by the company to make Calaveras valley, east of Milpitas, one vast storage reservoir for water. There is now a field force of engineers at work, as well as some ten or fifteen men.

SANTA CRUZ.

FOR THE BIRDS.—A forest and song bird protective association is doing good work in Santa Cruz county.

PACKING HOUSE BURNED.—G. Kuzazza's packing house at Aptos was destroyed by fire October 24, with 6000 boxes of apples; loss is \$7000, partly insured.

SHASTA.

POISONED SHEEP.—Fall River Tidings: We are informed that 200 head of sheep belonging to Close Brothers were poisoned last week.

CO-OPERATIVE FRUIT SELLING.—Redding Free Press: About twenty of the fruit growers of Happy Valley sold 75 tons of fine dried peaches on the co-operative plan by samples recently, delivered at Anderson.

SOLANO.

LOW TAXES.—Solano county has the third lowest rate of taxation, Yolo county being the lowest with \$1.30, Colusa next with \$1.35, and Solano third with \$1.40.

SHEEP ON ISLANDS.—Benicia New Era: The sheep owners on Island No. 2 have about 2000 head on the range and are shipping large quantities each day, one lot to San Francisco each morning, and another to Vallejo.

CATTLE THIEVES.—Solano Courier: There is no longer any doubt but that an organized band of cattle and stock thieves are operating in Solano and Napa counties. Reed & Robbins have lost twenty-six head and William Gardner twelve head. No trace of them has been found.

IRRIGATING ORCHARDS WITH SUCCESS.—Dixon Tribune: E. E. Nudd recently installed a gasoline pumping plant on his fruit ranch in the Wolfskill tract, and, after finishing his own, is running the plant continuously, supplying water for nearly 100 acres of neighboring orchards. Mr. Nudd's orchard has such a green, healthy appearance that irrigation has taken root with the people of that section to an extent that they are willing to pay good prices for the water.

TULARE.

CONTEST JACOBS' WILL.—A brother and a nephew are contesting the will of E. Jacobs, the helpful landed millionaire who was so well known over the San Joaquin valley. They don't like the disposition he made of his property.

A BIG CANAL.—Nares & Saunders have just completed a water canal 14 miles long and 14 feet wide to supply 8000 acres on the Laguna de Tache grant in Fresno county. It intersects the large canal east of Kingsburg and runs most of the way through Kings county.

SMALL FARMS WANTED.—Weekly Register: C. R. Scott, who has recently sold several places to Kansas people, reports a good deal of inquiry for small places. Once settle this district trouble and the Tulare country will be cut into small farms at a lively rate.

ON THE RIGHT ROAD.—Frank Gianinni has purchased a prune grader to grade his own prunes and especially to grade the little ones out so as not to hurt the price. He wishes that he had gotten one in season to have graded his peaches.

IN THE MOUNTAINS.—Springville cor. Porterville Enterprise: Oranges have been eatable for several weeks and are now quite golden. The crop is far ahead of what was expected during grasshopper time.

TEHAMA.

OLIVE CROP.—The olive crop about Corning will be fairly good this year considering the youth of the orchards.

MOHAIR.—Observer: A shipment of 6000 pounds of mohair from a Paskenta flock was made to New York from Corning the other day.

THE HOME CIRCLE.

The Cradlers.

(An Old-Time Harvest Scene.)

The golden wheat stands like a wall—
A twenty-acre field.
The brawny cradlers—five in all—
Bare-breasted, hairy-armed, and tall,
"Allow that patch must yield;"
Their "grape vines" o'er their shoulders
swung
With fingers crookt, and broad blades
hung,
Like falchions backward steeled.

Like sons of Anak in their might,
They whet their shining blades,
Then to the charge—a thrilling sight—
Leads up the first, swings to the right—
Left sweep, through cereal glades,
The shorn stems on the fingers laugh,
Fat kernels peep through bursting chaff,
On heads gone to the shades.

Another, and another sweep—
The second man starts in,
So waits the third, in cutting deep,
Then fourth and fifth at distance keep,
The same, ere they begin;
Now all with mighty, rhythmic swing,
Advance, and then their broad blades
ring,
And gleam like burnished tin.

Five crescents gap the grain a-pear,
As the five blades swing home,
Five golden gavels fall a-rear,
And five line-buffed swaths appear,
Lain each inside its comb,
As the five mighty reapers sway,
From side to side in slant array,
Like gulls o'er ocean's foam.

So, all day long, thro' rising morn,
And midday's shimmering heat,
The swish of severing scythes is borne,
Or whetstones chanting to the corn,
The death song of the wheat.
Only the noon-tide dinner call,
Awhile brings rest and truce to all—
A lull before defeat.

Hot, round and red, in western sky,
Sinks low the summer sun;
And still the swinging cradles sigh,
While all around the fallen lie
In sheaves, the fight near won.
Then binders all, and cradlers join,
And shock the sheaves, and cap, and
groin—
The day—the task is done.

—Chicago Inter-Ocean.

A New Casabianca.

The office boy called to the man at the desk. He waited a moment and called again. The man looked up.

"What's that?" he sharply asked.

"A girl to see you, sir."

"Tell her to talk to Mr. Randall."

"She says she must see you, sir. She has a letter."

"Show her in." And the busy man's eyes dropped again to his work.

He was so absorbed that he did not hear the girl when she entered. She looked at his profile for a moment and then seated herself.

Presently he glanced up with his hand outstretched to take a book from the top of the shelf. He caught sight of the girl.

"Oh, yes," he said; "you wished to see me. Pardon me for keeping you waiting. How can I serve you?"

He spoke hurriedly in a crisp, nervous way, and the girl felt that he scarcely looked at her.

"You are Mr. Jasper Gregg?"

"Yes."

"I have a letter for you from Mr. Cleghorn."

"Mr. Cleghorn asks me to give you a position on our clerical force. What can you do?"

"I am a fair stenographer and a good typewriter."

"Any experience in office work?"

"No."

Jasper Gregg seemed to study over the matter for a moment.

"Mr. Cleghorn's recommendation is a strong one," he said. "We will give you a trial. There happens to be a vacancy. The work is not easy and the hours are long. Kindly give me a week's notice when you make up your mind to quit. Report to Mr. Randall, the head bookkeeper, in the next room. Wait; we will pay you \$8 a week to begin with, and there will be no raise for the first six months. That's all."

"Thank you," said the girl, and she smiled, but whether over the prospect of receiving the place or the extremely brusque way in which the young superintendent conducted the negotiation it was difficult to tell.

Jasper Gregg looked after the girl as she passed through the doorway, and it suddenly struck him that she had a firm and yet elastic way of walking, and that her simple frock was neat and becoming. Then he leaned back and softly sighed. Somehow the appearance of this stranger, with her big gray eyes and her firm chin and a little bunch of violets on her throat, had quite upset his comfortably-prepared train of business thought.

He half turned in his chair to look out of the window. He could see the green hills, cutting ridges against the blue sky beyond the limits of the little town, and his eyes sought the shady woods that crowned them, and the big world beyond seemed to beckon him away from the great throbbing factory. He bit his lips and turned back to his desk. He had no business to feel tired, and furthermore should have no feelings save those that were inspired by his work. He was a machine. Machines might wear out, but they never feel tired. Picking up his papers, he touched the bell and the boy entered.

"Send in Miss Bellamy."

"If you please, sir, Miss Bellamy sent word that her mother was sick, and she couldn't come down this morning."

"Send in Miss Storer."

"Miss Storer began her vacation this morning." The boy paused. "There's the new girl; she isn't doing anything."

"Bring a typewriter and send in the new girl."

The boy brought the typewriter and its table and placed them close to Jasper's desk. A moment later the girl entered.

"I want you to typewrite a few letters from dictation, Miss Vernor," said Jasper. "They are important letters and must be carefully worded—so I will not hurry you."

She seated herself at the little table and prepared her paper in a deft and businesslike way. And Jasper noticed, too, that her hair was very pretty and neatly arranged. He had not noticed this before, because he was a slow observer along these lines and besides she had worn her hat.

Then he began to dictate.

When the girl handed him the first letter he looked it over carefully.

"You spell well," he said.

"That is an accomplishment I forgot to mention," said the girl. She did not smile as she said it.

"Take the next letter," said Jasper.

He kept her busy for an hour:

"There," he said, "I think that clears up the lot. I am pleased with your work. Mr. Cleghorn did not overestimate your intelligence. If you stay with us for six months and continue to give satisfaction I think I can promise you a raise in wages."

"Thank you," said the girl, as she arose. Then she hesitated. "I want to be perfectly frank with you, Mr. Gregg," she said. "Mr. Cleghorn had another object in view in sending me here." She spoke a little hurriedly. "He has taken a kindly interest in my welfare, and could have found me work in the city, but he preferred to send me here. He wanted me to give him an idea of the way in which you manage the force and conduct the works."

Jasper smiled, and the smile lightened up the careworn face wonderfully.

"Cleghorn never did quite believe in me," he said. "He still thinks I am too young. But you needn't have told me this, Miss Vernor. It will not make the slightest difference in the present conduct of affairs. Everything will swing along just the same. I can't change my system, even to oblige Mr. Cleghorn. Give him the fullest particulars, please, and in the meantime don't forget that you are on the payroll as an active cog in the big machine." He laughed again. "I suppose that Mr. Cleghorn wants to keep a particularly observant eye on me."

The girl slightly reddened.

"If I remember aright there was no

exception made in your favor."

"In that case," said Jasper, "I think it would be best for you to have a desk in here. You might as well take my dictating and relieve me from the necessity of calling Miss Bellamy from her regular duties. Besides, I can give you some insight into my way of running things. I want Mr. Cleghorn to know all about it. There is nothing to conceal."

"I was quite sure of that," said the girl, "when I told you of my errand."

Jasper handed her the letters.

"Kindly ask Mr. Randall to mail these," he said. "That is all." And he bent over his work.

So Anna Vernor was installed at the extra desk in Jasper Gregg's office, and Jasper speedily found that her companionship did him good. It drew him away from himself and it gave him some interest in life beside his work.

And yet he was quite sure his work wasn't at all neglected on her account.

One day he said to her: "Miss Vernor, you ought to know all there is to know about me, and I fancy there may be details that have escaped even the astute Mr. Cleghorn."

"Very well, Mr. Gregg," said the girl. "Perhaps, as it is the story of your life, it should be preserved by the typewriter. And she leaned forward.

"Is that the way you trifle with Mr. Cleghorn's commission?" said Jasper, with marked gravity. "I'm astonished as your levity. You need not perpetrate my simple history in the way you suggest. No doubt, I will tell it to you so often that it will soon be indelibly impressed upon the tablets of your ductile memory."

This was the first time that Jasper had descended to a playful mood. His manner was a little strange, but Anna Vernor felt that it would improve rapidly.

"Proceed," she said.

"I was a poor boy, a poor country boy," he began, "and a poor country boy is about the poorest kind of a boy that can be imagined. I had come to town to find work or starve, and I was rapidly doing the latter when Mr. James Carew—bless his memory!—took me up and fed and clothed me, and set me on the road to self-supporting independence. He took me in his workshop, and taught me his craft, and I stood with him, helping as I could, while he perfected his inventions. Life was not all pleasant for Mr. Carew. He was cramped financially, and there was a certain sum he must set aside for the use of an invalid sister, Mrs. Blaine, who was in Europe at certain baths with her niece. Sometimes we went hungry, but I didn't mind that. I had caught his enthusiasm and those inventions seemed almost as much mine as his. It was slow work, and there was always the chance that the inventions would be stolen from us. It was tedious waiting for the patents. When they finally came my master's old friend, Lawyer Cleghorn, succeeded in borrowing the money for us, and we built this factory. Then, just as the wheels were set in motion, my patron died." Jasper paused and passed his hand across his forehead. "He left all he had to his niece, whose mother has since died; and he made Mr. Jonas Cleghorn executor. And he left me in charge at the works. It was his dying request. 'Jasper,' he said 'you are the only one who can keep this factory going. I have it arranged with Cleghorn. Don't you desert it. Stick by it. See it placed on firm ground. Do this for me, if not for the far-away little girl. Stand by this ship, Jasper.'" He half turned as he repeated the words and looked through the sunny window. Presently he resumed.

"I was twenty-five, a pretty serious boy with a pretty serious problem before me. But I stuck to it, night and day. In two years I had the debt paid. Last year we earned some money. This year we shall do far better. But it requires close attention. It's mine in trust only, you know. No doubt they think I'm a hard man, but I'm only a steward here with a serious reckoning ahead of me." He paused suddenly with a light laugh. "There you are," he said. "All in one chapter and dreadfully tame. No heroism,

no thrilling climax. Just a dry and commonplace little story."

For a moment the girl did not respond. She was intently studying slips of paper that lay before her.

"But how about the niece?" she presently asked.

"Her mother died last year," Jasper replied. "I understand that she will make her home abroad with friends."

The girl looked up.

"You have been confidential with me, Mr. Gregg," she said, "and I am going to repay you by reading aloud the notes of inspection I have made for Mr. Cleghorn. They sum in a disjointed way my observations for the past three weeks."

"I will not conceal the fact that you inflame my curiosity," said Jasper, with a smile. "Pray proceed."

The girl raised the first slip.

"I find," she read, aloud, "that my task is much simpler than I anticipated. Everything is done here in an A B C way that could be understood by the greenest novice. The people know their duties, and do them well. The discipline of the office force couldn't be better. The factory is clean and neat, and I doubt if there is a particle of waste. The business seems to be steadily increasing, and I understand it is fully double what it was up to the same period last year. There is no doubt that this success is almost entirely due to the fact that the somewhat troubled eye of the superintendent is eternally open and watchful. He is a peculiar man, this superintendent—more so than you had led me to expect. He is twenty-nine and at times looks fifty. The fact is, he is sapping his youth for this ungrateful factory. He runs every department of it and never takes a holiday. Of course results count. He has done wonders. But he has lost all the enjoyments of life—and I am afraid he has lost the capacity for wanting those enjoyments. Personally, he is always courteous and pleasant though inclined at times to be abstracted and reserved—and no wonder. Why, they say that he even prowls about the works at night, like a watchman on the lookout for fires." She paused and laid down the slips. "That's as far as I have gone," she said.

Jasper was silent for a moment.

"Thank you," he said, briefly. "You remind me of something I might have neglected. We have just increased our stock of materials and should carry more insurance. I will call up the agent and tell him to add \$20,000 to the amount we are carrying."

As he turned away from the 'phone he said in his usual quiet voice, "We will resume the letter writing, Miss Vernor."

The next morning brought the most momentous day in the history of the works.

Anna Vernor, seated at her typewriter, suddenly looked up with a startled air.

"Mr. Gregg," she called, "the room is filling with smoke!"

He looked up quickly, and hurried to the window.

"The factory is on fire!" he cried, and ran into the outer office. Anna heard his clear voice giving rapid instructions. In a moment he was back.

"We must get these books and papers into the safe," he cried. "There is a lot of valuable stuff here that must be saved."

Anna sprang to his assistance, but the time was brief. In a moment they heard the roar of the flames, a black smoke cloud rolled against the window.

"You must leave at once," cried Jasper, and he caught her by the arm and drew her through the doorway and to a side entrance. Then he turned and ran back into the stifling smoke.

"Mr. Gregg," Anna shrieked, and blindly followed him, "come back," she cried, from the doorway. "You will be killed!"

"This is my place," he shouted, "I'm sticking to the ship."

"I command you to leave here," she called to him.

"You command me!" he cried, through the smoke. "I'm master here."

The girl gave a little scream. "Jasper!" she cried, "save me, save me!"

He dropped the papers from his hands, and ran to her with a quick cry. He caught her as she staggered blindly, and hurried through the office door to the outer threshold. And then, just as he crossed it, a heavy section of the cornice crashed down on him.

It was a month later before the fever left Jasper, and then he opened his eyes to find the sun shining, and the birds singing, and the white clouds drifting lazily across the windowed field. Somebody was sitting by the bedside. He turned his eyes a little. It was Anna Vernor.

"Wh—why," he stammered. "It's Miss Vernor." He looked at her, hungrily. "Have you been here all the time?"

"I haven't been far away," the girl replied.

"I saw you in my dreams," he said. "This isn't a dream, is it?"

"No," laughed Anna; "it's quite real now."

"Would you mind letting me touch your hand?" he asked.

She put her hand in his and he closed his wasted fingers upon it.

"And am I going to get well?"

"Of course you are, and very fast, too. You had a bad blow on the head, followed by a fever. But everything is coming out all right."

"And will I be of any use in the world again?"

"Of more use than ever, no doubt," laughed the girl. "But I mustn't flatter you."

"And the factory?"

"Pretty soon I will raise you up so you can see it through the window. We have almost rebuilt it, and the insurance was sufficient to pay for everything."

"Rebuilt it?" murmured Jasper.

"Why, who took charge of the work?"

"I did," said the girl. "I had good advisers, and I'm sure everything is just as you would want it."

"I'm afraid I'm dreaming again," he said.

"I'll have to wake you up," said the girl. "Listen. What do you think of our going into the combination? Wait. It's all settled. We get the big end of the deal. It's doubled the value of the plant at the very start off. But it costs you your place."

He smiled faintly.

"Well," he said, "I did my best. I have nothing to regret."

"Of course the combination doesn't mean to be ungrateful," said the girl. "It has made you first vice-president, with all the responsibility in your hands, and a \$10,000 a year salary as part compensation. Wait. Your office is to be in New York, and just as soon as you are well enough you are to go abroad to advance the combination's interests."

He closed his eyes, and was quiet for a little while.

Then he looked at the girl.

"I have never known such happy moments as these," he said. "It is a great joy to just lie here and look at you."

"That's a strange sentiment for a man of action," laughed Anna Vernor, a flush of red stealing across her cheeks.

"A queer change has come over me," murmured Jasper. "I don't know what it is. I only know that what concerns me the most of anything in this world just at the present moment is the answer to the question I am going to ask you, Anna Vernor. If I go away will you go with me?"

The girl leaned forward.

"As your typewriter?"

"As my wife."

She took his wasted hand in both her plump ones.

"One moment," she said. "I have deceived you, Jasper. It was the act of a romantic girl with strange notions. Do you remember at the time of the fire that I commanded you to leave the burning office?"

"Yes, yes."

"I had the right to command you, Jasper."

"Yes," she went on, "I am Anna Blaine—Anna Vernor Blaine, the far-

away girl you never saw, the girl for whom you planned and slaved—making life so beautiful for her, so dull for you." She paused and caught her breath. "Does this make any difference, dear Jasper?"

She read the answer in his shining eyes.—W. R. Rose.

Clothes, Moths and Others.

There are four stages in the life of the moth—the egg, the larva, the pupa, the moth. The moth generally deposits its eggs where the larva may find suitable food—that is, in furs, feathers and wool materials.

The larva emerges from the egg in the form of a worm, which immediately begins to feed upon its surroundings. It makes a case for itself with particles of the materials upon which it feeds, and moves about in this. If the article in which the eggs were deposited is soiled, the development of the larva is rapid, and, as a consequence, the destruction of the material is greater than it would have been had the article been clean.

When the larva reaches full growth it fastens itself to some substance, generally the article on which it has been feeding. In about three weeks the moth emerges from the case, and soon begins depositing eggs for a new generation. Now, although the moth does not directly injure fabrics, it supplies the eggs from which the destructive larvæ are hatched. When moths are seen flying about, there is every reason to suspect that the eggs are being deposited.

The necessary precautions are first to kill all the moths seen, and to shake, brush and air all articles frequently. Thoroughly brush and beat all upholstered furniture. Before putting away woollens, furs or feathers see that they are as clean as possible. Wearing apparel should have all the pockets turned inside out, all the seams and hems brushed and then be well shaken and aired. Clean all soiled places with benzine or turpentine. If there is any danger of eggs having been deposited in furs, carefully comb the furs, using a steel comb. Pin the articles in cotton bags. Put them in heavy boxes or closets that have been made insect and germ free by carbolic acid. Put bits of cotton, wet with oil of cedar, in the boxes or closets, or cedar chips or camphor may be used.

From early spring until late fall, carpets, upholstered furniture and woolen garments hanging in closets in constant use should be brushed, beaten and aired frequently.

Should moths get into furniture, carpets or any articles where it is difficult to reach the larvæ, the surest and cleanest method of eradicating them is to saturate the articles with naphtha, always keeping in mind that this must be done away from the fire and artificial light, and with the windows wide open. If the infested articles can be taken out on a piazza, the naphtha may be applied freely.

Under the names silver moth and silver fish, and also as bristletail, silver witch, etc., is known an insect that is destructive to paper books, starched articles and some kinds of food. The bristletail is about one-third of an inch long, tapering from the head to the end of the body, which ends in three thread-like caudal appendages. It is silvery white, with a tinge of yellow in the legs and abdomen. It finds its way to every part of the house, even under the wall paper, where it feeds on the paste. The remedies for this pest are plenty of light and air, frequent brushing of every part of the room, insect powder injected into crevices and sprayed on wall, floors and shelves. Rooms infested with these pests may be fumigated with sulphur, or have a thorough treatment with naphtha or carbolic acid.

Use the same remedies for the springtail and the book-louse, should they at any time appear in any part of the house.—Ladies Home Journal.

WASHINGTON'S EDUCATION, according to a recent lecturer, consisted, first, in

making his own school books; second, in forcing everybody he knew to teach him; third, in doing everything in the best way possible. Here, perhaps, is a suggestion for the persons who are endeavoring to find a way of simplifying the education which the modern school offers to the modern schoolboy. The schools can very well afford to make his school books, but the problem which has yet to be solved is how to teach him to force everybody else to teach him.

Rheumatism Cures.

The New York Sun has compiled a list of no fewer than 1437 different "cures" for rheumatism. There is no disease which seems to baffle the medical faculty more than this. It takes so many different forms and the knowledge of its causes is so indefinite, and on some points so much disputed, that, though the majority of human beings are sufferers from it, sooner or later, and there are numerous remedies, experience does not show which way to turn for relief. What appears to help one case will aggravate another. The lemon cure might help some one whose system needed more acid, whereas the alkaline treatment might simply make the conditions worse.

Miss Rural—And were you never in the country during the season for husking bees, Mr. Snappy?

Snappy—No. The idea! How do you husk a bee, anyhow?—Philadelphia Press.

DOMESTIC ECONOMY.

Nuts in Place of Bread or Meat.

When arranging nuts in bills of fare, use judgment and consider the chemical composition of each nut, just the same as in arranging meats and vegetables. For instance, chestnuts would be served with beans, and would take the place of potatoes or rice in a dietary. Chestnuts must be cooked just the same as potatoes or rice; uncooked they are exceedingly difficult of digestion. Ground or peanuts will take the place of beans or meat. In fact, they have a far greater food value than meat. Serve with potatoes or rice. Mixed with hominy, they form a typical or perfect food. The almond yields both a fixed and volatile oil, and is used as a flavoring rather than as a true food. Bitter almonds contain a substance known as amygdalin. When mixed with nitrogenous matter and water they have a slight digestive power, due to an enzyme known as emulsin. For this reason we have grown into the habit of eating sweet almonds at the close of the meal as an aid to digestion; this is, however, an error, as they do not contain as sufficient quantity of emulsin to be of much service.

The most valuable nuts, from a food standpoint, are the pine or pinon nuts, the ground nuts and the pecans. When pecans cannot be obtained any hickory nut may be used in their place. Pine nuts are cheap and abundant, rich in oil and contain some nitrogen. Used with hominy or other farinaceous foods they give quite an evenly balanced ration.

Nut sausages—These may be made on Saturday and used in the place of meat for a Sunday-night supper, or they may be served in very thin slices and passed with bread and butter.

Put through the nut-grinder half a pound of roasted peanuts, one ounce of blanched and dried almonds, half a pound of pecan nuts and half a pound of pine nuts. Mix with these six very ripe bananas. Pack the mixture into a kettle or mould, and steam continuously for two hours. When done, remove the lid of the kettle, and when the mixture is cold turn it out and serve the same as cold meat. This will keep for several days. Served with salad, this makes a nice luncheon dish.

Nut Rolls—Grind half a pound of nuts; add to them two cupfuls of white, soft breadcrumbs, four tablespoonfuls of peanut butter, half a cupful of grated coconut, chopped fine, a saltspoonful of celery seed, a level teaspoonful of

salt, and one well-beaten egg. Mix thoroughly; form into cylinder-shaped croquettes or into round balls; dip in egg, roll in breadcrumbs, fry in deep, hot fat, and serve with nut sauce.

Mock Codfish Balls—Grind a quarter of a pound of pecans, the same of pine nuts, and a quarter of a pound of English walnuts. In the winter mix these with two cupfuls of boiled and mashed salsify; in the warm weather use hominy grits. Season with a level teaspoonful of salt, a tablespoonful of grated onion, a tablespoonful of chopped parsley; add two tablespoonfuls of dry breadcrumbs; mix and form into balls; dip in egg, then in breadcrumbs, and fry in deep, hot fat. Serve with tomato sauce.

Nut Croquettes—Grind half a pound of pine nuts; mix them with half a pound of almonds, blanched and dried; add to these two cupfuls of mashed potatoes, a teaspoonful of onion juice, a level teaspoonful of salt, the yolks of two eggs, and a grating of nutmeg. Form into cylinder-shaped croquettes. Dip in beaten egg, roll in breadcrumbs, and fry in deep, hot fat.

Nut Sauce—Rub together one tablespoonful of butter and one of flour; add slowly half a pint of boiling water. Stir over the fire until it begins to boil; take from fire and add the yolks of two eggs, the juice of half a lemon or two tablespoonfuls of tarragon vinegar.—Ladies' Home Journal.

Domestic Hints.

CLAM FRITTERS.—Add the liquor of twelve clams to one pint of milk, three well-beaten eggs, salt, and as much flour as is needed to make a thin, smooth batter. Chop the clams, and stir them into the batter. Fry in very hot lard.

LETTUCE SALAD.—Wash and arrange in a dish the whitest leaves of half a head of lettuce. Chop or cut the remaining half; mix with a mayonnaise dressing and pour in center of leaves. A few leeks may be chopped in the salad or served on the table afterward.

BAKED HASH OF RICE AND BEEF.—Into a stewpan put one cupful of chopped cold beef, one cupful of cooked rice, one cupful of milk, two tablespoonfuls of butter, one teaspoonful of salt, one-fourth of a teaspoonful of pepper. Stir for one minute, then add a well-beaten egg. Turn the hash into a baking dish and bake twenty minutes.

SANDWICHES IN CREAM SAUCE.—Sandwiches left over are not usually very inviting, but they may be made so by this method. Warm them slightly in the oven, and to every three sandwiches made from chicken, veal or tongue, make a white sauce with one tablespoonful of butter, one tablespoonful of flour, one-half teaspoonful of salt, a dash of pepper and one cup of milk cooked until thick. Then add the yolk of one egg well beaten. Pour this over the sandwiches and serve at once.

WHITE BREAD GRIDDLE CAKES.—Chop as much stale bread as will measure two cupfuls, put it into a bowl and pour over it a cupful of sweet, rich milk, let it soak for an hour. When ready to bake the cakes, mash the bread in the milk with a wooden spoon, add a heaping teaspoonful of sugar, a teaspoonful of salt, two tablespoonfuls of melted butter, two well-beaten eggs, sift into the mixture a cupful of white flour and an even teaspoonful of soda, stir well together, then add a cupful of sour milk and bake on a griddle.

LEMON MERINGUE PUDDING.—Two cups stale breadcrumbs, two cups cold water, one lemon, two-thirds cup sugar, three eggs, one-half cup chopped suet, two tablespoonfuls powdered sugar. Soak the crumbs in the water for thirty minutes, then add the grated rind of the lemon. Beat the yolks of the eggs till thick and lemon-colored, add the sugar and suet and mix thoroughly. Add the other ingredients. Bake for an hour. Beat the whites of the eggs to a dry froth and make a meringue with three tablespoonfuls of powdered sugar. Heap lightly on top of the pudding, dust with powdered sugar and brown delicately. Serve with a liquid sauce.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Oct. 29, 1902.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday.....	72 3/4 @ 72 3/4	73 3/4 @ 73 3/4
Thursday.....	72 3/4 @ 72 3/4	73 3/4 @ 73 3/4
Friday.....	72 3/4 @ 72 3/4	74 3/4 @ 74 3/4
Saturday.....	72 3/4 @ 72 3/4	73 3/4 @ 73 3/4
Monday.....	72 3/4 @ 72 3/4	73 3/4 @ 74 3/4
Tuesday.....	72 3/4 @ 72 3/4	74 3/4 @ 75

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1902.	May, 1903.
Thursday.....	\$1 27 1/4 @ 1 30 3/4	\$1 29 3/4 @ 1 32 1/4
Friday.....	1 31 @ 1 30 3/4	1 31 1/4 @ 1 31 3/4
Saturday.....	1 30 3/4 @ 1 33 1/4	1 32 @ 1 34 1/4
Monday.....	1 36 @ 1 36	1 35 1/4 @ 1 36 3/4
Tuesday.....	1 36 @ 1 33 1/4	1 36 1/4 @ 1 34 1/4
Wednesday.....	1 26 1/2 @ 1 27	1 28 1/4 @ 1 28 3/4

WHEAT.

There is a general feeling in this market that the high price of wheat is due to actual conditions and not to speculation; that speculation prices in this case simply follow the actual condition. The carry-over of grain sacks this year is fully 10,000 more than usual, showing an actual shortage in the crop, which dealers seem unable to account for, possibly overlooking the circumstance that while the straw was fully up to the usual size this year the wheat heads were unusually short, causing a yield surprisingly small and out of all proportion to the appearance of the fields. The harvest seems to be only about two-thirds of what was expected. There has been an unusual demand from Australia, owing to the drouth there, and a 25,000-ton sale for that point was made October 24. There were nine ships chartered for grain to Australia up to and including Monday, with some secured at 15s and the available tonnage in port increasing. It is said here that sales have mostly come from dealers and that farmers are holding on; certainly dealers who have been scouring the interior and offering the San Francisco price plus freight have been unable to get the grain wanted. There were no offerings at Stockton, Woodland or Modesto, and the latter market was reported bare of supplies in the hands of producers. The latest reports are that conditions are brightening in Australia, and the demand for American wheat lessening, and that a movement of Oregon milling wheat to this point is likely, the steamer Robert Dollar and others having been chartered for that purpose. Cargoes are going to Australia from other Pacific and Atlantic points. The market in San Francisco seems to be largely controlled by local forces at present and is somewhat independent of other markets. Prices of Wheat have continued to climb, notably so the first of the week.

The market to-day showed some slight decline from the exceptional figure of Tuesday, and closed in favor of buyers.

California Milling.....	1 37 1/4 @ 1 40
Cal. No. 1 shipping, alongside.....	@ 1 35
Oregon Valley.....	@
Washington Blue Stem.....	@
Washington Club.....	@
Of qualities wheat.....	1 31 1/4 @ 1 32 1/4

FLOUR.

Flour advanced 25 cents all around on Monday of this week. The accompanying market was lively and has continued active since, without quotable change. A dispatch dated Portland, Or., October 27, says: "The Portland & Asiatic liner Indrashama cleared to-day for Hongkong and way ports with the largest cargo of flour that was ever taken out of the Columbia river. She has on board 52,597 barrels. Reduced to wheat measurement, this would equal nearly 240,000 bushels, enough to load two of the average-sized ships which come here."

Superfine, lower grades.....	\$2 65 @ 2 90
Superfine, good to choice.....	3 00 @ 3 25
Country grades, extras.....	3 65 @ 3 85
Choice and extra choice.....	3 85 @ 4 15
Fancy brands, jobbing.....	4 15 @ 4 25
Oregon, Bakers' extra.....	3 25 @ 3 55
Washington, Bakers' extra.....	3 25 @ 3 75

BARLEY.

From a price and dealings standpoint the barley market for the past week has been dull, but firm. The most notable thing in this line of dealings has been the petition of the Big Four—G. W. McNear, Balfour, Guthrie & Co., Girvin & Eyre and Eppinger & Co.—to secure a rule from the Merchant's Exchange declaring the Port Costa, California, Nevada and Pacific Coast Warehouse & Dock Co. and the Granger's warehouses at Port Costa "regular" for the delivery of barley, at

50 cents a ton less than San Francisco warehouses, which would probably enable those firms who control the Port Costa warehouses to capture most, if not all, of the feed barley warehousing and trade, amounting to some 6000 tons a month at its highest, and the advantage of charges, perquisites and control which necessarily or otherwise accompany it; which petition was vigorously opposed by other members and finally denied by the board, which also rescinded the action taken some time ago, making the Howard warehouse in Oakland "regular" for the delivery of barley. If any outside houses were to be made regular Stockton dealers demanded to be included. In the course of the proceedings the practices of some dealers of weighing in grain generously and weighing out penuriously and keeping the difference as "perquisites," an action unjustified by the rule of the Exchange or the wording of grain receipts was unfavorably considered, and for the prevention of this practice it is possible that a bill will be introduced into the Legislature this winter. Speculative prices had a slight setback, early this week, but the market remains generally firm.

Feed, No. 1 to choice.....	1 21 1/4 @ 1 22 1/4
Feed, fair to good.....	1 17 1/4 @ 1 20
Brewing, No. 1 to choice new.....	1 23 1/4 @ 1 26 1/4
Chevalier, No. 1 to choice.....	1 50 @ 1 60
Chevalier, common to fair.....	1 30 @ 1 45

OATS.

Oats continue in very light receipt but firm in price.

White Oats, fancy feed.....	1 25 @ 1 35
White, good to choice.....	1 22 1/4 @ 1 25
White, poor to fair.....	@
Gray, common to choice.....	1 17 1/4 @ 1 25
Milling.....	1 22 1/4 @ 1 27 1/4
Surprise, good to choice.....	1 25 @ 1 32 1/4
Black Russian.....	1 15 @ 1 30
Red.....	1 20 @ 1 35

CORN.

Egyptian corn has begun to arrive. Other corn continues firm at prevailing prices.

Large White, good to choice.....	@
Large Yellow.....	1 @ 1 48 1/4
Small Yellow.....	1 50 @

RYE.

Further sales have been made at top prices.

Good to choice.....	1 08 1/4 @ 1 10
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BUCKWHEAT.

In some of the places where the small California supply is raised, the crop was somewhat damaged by the late rains. The market is nominal at the quotations given.

Good to choice.....	1 55 @ 1 70
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BEANS.

There has been practically no change in prices in this line during the week covered by this report, nor is any special change likely until the total yield and the damage done by the rain can be more accurately seen. Threshing is over. In the Ventura section, where the yield is more accurately accounted than elsewhere in the State, the yield was locally very variable, but it is expected that the general total will be about 450,000 sacks. Another estimate is for thirteen to fourteen sacks to the acre. At Bromello, Casimalla and Arroyo Grande the output is locally reported nearly half of a good yield. In the last named section the rain put a damper on threshing of the Black Eye bean, with about 400 sacks in one locality unthreshed. In the Sacramento and San Joaquin river section the rain caught a good portion of the crop unthreshed or unhusked—800 sacks on one place, 2000 on another, and some on nearly every ranch near Courtland. Receipts of beans, Monday, were 10,350 sacks.

Pea, fair to good, 100 lbs.....	3 50 @ 3 75
Small White, good to choice.....	3 25 @ 3 50
Lady Washington.....	3 20 @ 3 30
Pinks.....	2 70 @ 2 85
Bayos, good to choice.....	2 90 @ 3 10
Reds.....	2 60 @ 2 75
Red Kidney.....	2 45 @ 2 50
Limas, good to choice.....	4 25 @ 4 40
Black-eye Beans.....	4 25 @ 4 50
Garbanzos, large.....	2 00 @ 2 25
Garbanzos, small.....	1 25 @ 1 50

DRIED PEAS.

Green Peas, California.....	1 50 @ 1 60
Niles Peas.....	1 55 @ 1 90

WOOL.

Outside advices from principal markets are that the wool market is everywhere steady and strong, with a disposition on the part of holders to wait. In Boston California wool is firm, with the demand good; northern county, cleaned basis, 52@53c; middle counties, 48@50c; southern, 45@47c; six to eight months, 13@14c less. The wool sale at Ukiah commencing last week Tuesday, opened dull, with no large sales, but one small lot reported sold at 15c. The majority of holders pooled, and prepared to await better prices. Later reports have it that sales subsequently were brisk at 13 1/4 @ 14c for best

falls, but we have no direct information at this writing. Mohair brought 26c at Ukiah. The wool clip in the warehouse amounted to about 1000 bales, over 200,000 pounds, held by 92 contributors. Cloverdale sales were set for the 28th.

SPRING.

Humboldt and Mendocino.....	18 @ 20
Northern Sacramento Valley, free.....	15 @ 16 1/4
Northern Cal., defective.....	13 @ 14
Middle County, free.....	13 @ 15
Middle County, defective.....	12 @ 13
Southern, 7 mos.....	9 @ 11
Southern, 12 mos.....	9 @ 10
Foothill.....	11 @ 13
Oregon Valley, fine.....	16 @ 17
Oregon Valley, coarse to medium.....	14 @ 15
Eastern Oregon, choice.....	13 @ 16
Eastern Oregon, fair to good.....	10 @ 12
Nevada, as to condition.....	12 @ 15

FALL.

Humboldt and Mendocino.....	13 @ 14
Northern, free.....	10 @ 12
Southern, fair to good.....	8 @ 10
San Joaquin, Lambs.....	8 @ 11

HOPS.

Local quotations remain unchanged. New York and foreign advices show firmness in the market, with a tendency to advancing prices. London advices of Tuesday give higher quotations for this coast than are locally given, ranging from 25 1/2c for choice Oregon to 26c for Sonomas and 26 1/2c for choice Yakimas. The same reports name 33c as paid for two large lots of Malone, N. Y., hops and 32c for smaller ones. Outside quotations on States at London was advanced to 35c. German and London markets were steady. Increased beer sales for the month, and the Oregon crop as short 90,000 bales were reported.

California, good to choice new.....	22 @ 26
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HAY AND STRAW.

The hay market still continues on the same level as for the past week or more, without any general and apparent good reason, unless it is that producers do not feel anxious to sell, believing the present price will be well maintained, at least, for some time, with possibility of further rise, while some dealers in the city, for reasons special to themselves, are showing a willingness to sell at less than justifiably high rates. There is in the city a steadily, if not rapidly, increasing use of other methods of travel than those involving the use of hay, and a feeling that while prices may remain at the present height for some time, and may even rise higher, such a phenomenal rise as that of some years ago, with its sudden collapse, is out of the question again. An account of stock on hand is now being taken, which it is thought by some will show only about 100,000 tons on hand, and quotations in some quarters have risen 50c on choice wheat hay.

Wheat, good to choice.....	11 00 @ 14 00
Wheat and Oat.....	9 50 @ 12 50
Oat, good to choice.....	7 50 @ 12 50
Barley.....	7 50 @ 9 50
Clover.....	7 50 @ 9 50
Alfalfa.....	9 00 @ 10 00
Volunteer.....	7 50 @ 8 50
Compressed.....	10 00 @ 13 50
Straw, 1/2 bale.....	40 @ 57 1/2

MILLSTUFFS.

The market continues strong at high figures.

Brans, 1/2 ton.....	21 50 @ 22 50
Middlings.....	24 00 @ 25 50
Shorts, Oregon.....	22 00 @ 23 00
Barley, Rolled.....	25 00 @ 26 00
Cornmeal.....	30 00 @ 31 00
Cracked Corn.....	30 50 @ 31 50

SEEDS.

	Per ctt.
Alfalfa, Cal.....	8 00 @ 8 50
Flax.....	2 25 @ 2 75
Mustard, Yellow.....	2 25 @ 3 50
Mustard, Trieste.....	3 00 @ 3 25
	Per lb.
Canary.....	4 1/4 @ 4 1/4
Rape.....	1 @ 2 1/4
Hemp.....	3 1/4 @ 4

BAGS AND BAGGING.

Inactivity prevails in all departments of the bag trade, leaving the market featureless. Quotable values remain nominally as last noted, and are based either on asking figures or latest reported transactions.

Calcutta Grain Bags, buyer June-July.....	@
Calcutta Grain Bags, spot.....	5 @ 5 1/2
San Francisco Grain Bags, 22x36, spot.....	5 1/4 @ 5 1/2
San Quentin Bags, 100.....	5 55 @
Wool Sacks, 4 lbs.....	35 @ 36
Wool Sacks, 3 1/2 lbs.....	32 @ 33
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/4 @ 5
Fruit Sacks, cotton, three sizes.....	6 1/4 @ 7
Fruit Sacks, Jute.....	7 @ 7 1/4

HIDES, PELTS AND TALLOW.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 55 lbs.....	11 @	9 1/4 @
Medium Steers, 48 to 55 lbs.....	10 @	8 1/4 @

Light Steers, under 48 lbs.....	8 1/4 @	7 1/4 @
Heavy Cow Hides, over 50 lbs.....	9 @	8 @
Light Cow Hides, under 50 lbs.....	8 1/4 @	7 1/4 @
Stags.....	7 @	6 @
Wet Salted Kip.....	8 1/4 @	7 1/4 @
Wet Salted Veal.....	9 1/4 @	8 1/4 @
Wet Salted Calf.....	10 @	9 @
Dry Hides.....	16 @ 17	15 @
Dry Kip and Veal, 11 to 16 lbs.....	13 @	11 @
Dry Calf, under 4 lbs.....	18 @	16 @
Salted Horse Hides, large.....	2 75	@ 3 00
Salted Horse Hides, medium.....	2 25	@ 2 50
Salted Horse Hides, small.....	1 50	@ 2 00
Dry Horse Hides, large.....	1 75	@
Dry Horse Hides, medium.....	1 50	@
Dry Horse Hides, small.....	1 25	@
Dry Colts' Hides.....	50 @	@
Pelts, long wool, 1/2 skin.....	80	@ 1 00
Pelts, medium, 1/2 skin.....	50	@ 75
Pelts, short wool, 1/2 skin.....	30	@ 40
Pelts, shearing, 1/2 skin.....	15	@ 30
Deer Skins, best summer.....	35	@
Deer Skins, good medium.....	—	@ 30
Deer Skins, thin winter.....	—	@ 20
Elk Hides.....	10	@ 12
Tallow, good quality.....	5 1/4 @	6 @
Tallow, No. 2.....	4 1/4 @	5 @
Goat Skins, perfect.....	30	@ 37 1/2
Goat Skins, small.....	10	@ 20
Kid Skins.....	5	@ 10

HONEY.

The market is firm at quotations. Some considerable sales have been made by producers in southern California of late, as noted elsewhere.

Extracted, White Liquid.....	5 1/4 @ 6
Extracted, Light Amber.....	5 1/4 @ 5 1/2
Extracted, Amber.....	4 1/4 @
Extracted, Dark Amber.....	3 1/4 @ 4
White Comb, 1 lb frames.....	12 @ 13 1/4
Amber Comb.....	8 @ 10
Dark Comb.....	7 @ 7 1/4

BEESWAX.

Good to choice, light, 1 lb.....	27 @ 29
Dark.....	25 @ 26

LIVE STOCK AND MEATS.

The cost of hay for feed has slightly raised prices on Nevada mutton. There have been some slight fluctuations in veal and lamb. There has been some slight decline on higher quality hogs, but with little effect on arrivals. Good large hogs have been in good demand, with the disposition of dealers rather against small ones. Beef is steady.

Allowing for the shrinkage of about 50 per cent, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, first quality, dressed, net 1/2 lb.....	7 @
Beef, second quality.....	6 1/4 @
Beef, third quality.....	6 @
Mutton—ewes, 7 1/2 @ 8c; wethers.....	8 @ 8 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/4 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4 @ 6 1/2
Hogs, soft or acorn fed.....	@
Hogs, country dressed.....	7 1/4 @ 8
Veal, small, 1/2 lb.....	7 @ 8 1/4
Veal, large, 1/2 lb.....	6 1/4 @ 8
Lamb, spring, 1 lb.....	9 @ 9 1/4

POULTRY.

Offerings in poultry have been a little heavier this week than last, with some sag in prices, young stock holding up better than old, as usual.

Turkeys, alive, choice young.....	17 @ 19
Turkeys, alive, Hens, 1 lb.....	16 @ 17
Turkeys, alive, Gobblers, 1 lb.....	16 @ 17
Hens, California, 1/2 dozen.....	5 00 @ 6 00
Roosters, old.....	5 00 @ 5 50
Roosters, young (full-grown).....	5 00 @ 6 00
Fryers.....	4 00 @ 4 50
Broilers, large.....	4 00 @ 4 50
Broilers, small to medium.....	3 25 @ 3 75
Ducks, old, 1/2 dozen.....	2 50 @ 4 00
Ducks, young, 1/2 dozen.....	3 00 @ 5 50
Geese, 1/2 pair.....	1 50 @ 1 75
Goslings, 1/2 pair.....	1 50 @ 1 75
Pigeons, old, 1/2 dozen.....	1 25 @ 1 50
Pigeons, young.....	1 75 @ 2 00

BUTTER.

Butter is still plentiful, with a downward tendency.

Creamery, extras, 1/2 lb.....	28 @ 29
Creamery, firsts.....	26 @ 27
Dairy, select.....	25 @ 26
Dairy, firsts.....	24 @ 25
Dairy seconds.....	21 @ 23
Firkin, good to choice.....	22 @ 23 1/2
Mixed store.....	18 @ 20
Pickled Roll.....	22 @ 24

CHEESE.

Cheese is firm, with no immediate prospect of change.

California, fancy flat, new.....	13 @
California, good to choice.....	12 @ 12 1/4
California, "Young Americas".....	14 @ 14 1/4

EGGS.

Prices on California have fallen off until 35c to 40c is the top of the selling price on the part of commission men to the local trade.

California, select, large, white and fresh.....	35 @ 40
California, select, irregular color & size.....	@
California, good to choice store.....	@

VEGETABLES.

There are plenty of onions in this market, with a slow movement at cheap prices, ranging from 25c to 65c. Flat and Globe onions are at a discount. Australian Browns bring about 65c per 100. Marrowfat squash hang fire and

Hubbards are a drug at quotations given; but yellow Eastern pumpkins go readily at prices named.

Beans, Lima, # lb.	2 1/2 @	3 1/2
Beans, String, # lb.	3 1/2 @	5
Cabbage, choice garden, # 100 lbs.	50 @	60
Cucumbers, # large box.	60 @	80
Egg Plant, # large box.	60 @	80
Garlic, # lb.	2 @	3
Onions, Yellow Danver, # cental.	40 @	55
Okra, Green, # box.	40 @	60
Peas, Sweet garden, # lb.	2 1/2 @	4
Peppers, Green Chile, # box.	40 @	75
Peppers, Bell, # box.	40 @	75
Pumpkins, Eastern Yellow.	10 @	15 00
Squash, Hubbard, # ton.	5 00 @	8 00
Squash, Marrowfat, # ton.	8 00 @	10 00
Summer Squash, Bay, # large box.	75 @	1 00
Tomatoes, # large box.	40 @	75

POTATOES.

Salinas Burbanks are moving readily and Merced Sweets rapidly in comparatively limited supply, but River Burbanks and Oregon go slow at figures given. Poor stock generally is at a discount.

Burbanks, Salinas, # cental.	1 20 @	1 30
River Burbanks, good to select, # cental.	25 @	60
River Reds.	65 @	90
Sweet Potatoes, # cental.	1 20 @	1 25

The Fruit Market.

FRESH FRUITS.

As the season of summer fruits is closing, the market is but slightly and raggedly supplied. First-class stuff in any line usually sells rapidly and at good price, but poor stuff meets a reception quite to the contrary. Quotations on wine grapes have been withdrawn. Peaches, prunes and plums are practically done for. Strawberries in good condition are still favorably received by the public, and raspberries likewise. The price of Oregon apples has fallen; but, on account of the decrease in other fruits, the principal trading is now in apples and grapes, at satisfactory prices. Supplies have been heavy, but not excessive. Considerable very poor Bellefleur stock is finding its way to the hands of peddlers; but first-class stocks of any variety usually bring a good price. There has been an unusual amount of wormy apple stock.

Apples, fancy, # 4-tier box.	1 25 @	1 50
Apples, good to choice, # 50-lb. box.	75 @	1 00
Apples, common to fair, # 50-lb. box.	25 @	50
Cantaloupes, # crate.	50 @	1 00
Cranberries, Cape Cod, # barrel.	8 50 @	9 00
Cranberries, Coos Bay, # 60-lb. box.	2 25 @	2 50
Raspberries, # chest.	5 50 @	7 00
Grapes, Cornichon, # crate.	40 @	65
Grapes, Isabella, # crate.	40 @	75
Grapes, Muscat, # crate.	40 @	65
Grapes, Black, # crate.	30 @	65
Grapes, Seedless, # crate.	85 @	1 15
Grapes, Tokay, # crate.	40 @	75
Grapes, Zinfandel, # ton.	28 00 @	32 00
Grapes, Mission, # ton.	23 00 @	27 00
Nutmeg Melons, # box.	30 @	60
Peaches, # box.	40 @	75
Pears, Bartlett, # 40-lb. box.	75 @	1 35
Pears, other kinds, # box.	40 @	1 00
Persimmons, # box or crate.	50 @	1 00
Plums, choice large, # box or crate.	65 @	80
Plums, small, # box.	35 @	50
Prunes, # crate.	35 @	75
Pomegranates, # small box.	40 @	65
Quinces, # box.	35 @	60
Strawberries, Longworth, # chest.	7 00 @	9 00
Strawberries, Large, # chest.	3 00 @	5 00
Watermelons, # doz.	75 @	1 50

DRIED FRUITS.

The market still remains steady, the bulk of attention of dealers being on shipments to fill orders in time for the holidays, and stocks not being in excess, there is no tendency to cut prices generally. Large prunes are commanding as high as 1c premium.

EVAPORATED OR BLEACHED.

Apples, 50-lb. boxes, rings, pressed, good to choice.	4 1/2 @	5 1/2
Apricots, Moorpark.	7 @	10
Apricots, Royal, good to choice, # lb.	5 1/2 @	7
Apricots, Royal, fancy.	7 @	7 1/2
Figs, 10-lb. box, 1-lb. cartons.	65 @	80
Nectarines, # lb.	3 1/2 @	4 1/2
Peaches, unpeeled, choice.	4 1/2 @	5 1/2
Peaches, unpeeled, fancy.	5 1/2 @	6 1/2
Pears, halves, fancy.	7 @	8
Pears, halves, choice.	5 1/2 @	6
Pears, halves, fair to good.	3 1/2 @	4 1/2
Plums, Black, pitted.	4 1/2 @	5
Plums, Red and Yellow.	5 @	5 1/2
Prunes, Silver, good to fancy.	4 1/2 @	6
Prunes, in bags, 4 sizes, 2 1/2 @ 2 1/2 c; 40-50s, 4 1/2 @ 4 1/2 c; 50-60s, 3 1/2 @ 3 1/2 c; 60-70s, 3 @ 3 1/2 c; 70-80s, 2 1/2 @ 2 1/2 c; 80-90s, 2 @ 2 1/2 c; 90-100s, 1 1/2 @ 1 1/2 c.		

COMMON SUN-DRIED.

Apples, sliced.	3 1/2 @	—
Apples, quartered.	3 1/2 @	—
Figs, White, in bulk.	3 1/2 @	5
Figs, Black, in sacks, # lb.	2 1/2 @	3 1/2
Plums, unpitted, # lb.	1 1/2 @	2 1/2

RAISINS.

The complaint is made in some quarters that raisin sales are slow, and it is possible that the strikes and rumors of strikes, especially in transportation lines, together with the great demand for cars for more perishable products on the Pacific coast, may have had some effect in delaying Eastern orders; but there is nothing in the situation to alarm producers, since the total of the sales some days ago

showed a greater tonnage sold this year already than sold in the whole of last year—25,000 tons last year—which, at the increased prices of this year means that the growers have received over \$500,000 more this year than last, with, it is estimated, over 20,000 tons still to sell. Recently a sale of 15,000 tons was made to the seeders, on open notice to all, the Pacific Coast Co. taking about 10,000 tons, at about 1c rebate, the rebate not to be collectable until a certain large amount had actually been taken. The Yolo county raisins were well secured before the rain.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb. boxes, 5c # lb; No. 3 crown do, 5 1/2 c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/2 c; No. 2 crown London Layers, 20-lb. boxes, \$1.30 # box; No. 3 crown do, \$1.40; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

Advices are that shipments of Late Valencias from the south, which have been such money makers for the producers and have found such ready sale in Honolulu and up the coast are about to end. It is rumored on the street that another citrus auction company, composed of a number of strong firms, is likely to be a feature of the market here this winter. New oranges have not yet arrived, and advices reach here that some southern California growers have met and agreed not to ship their fruit this year until it shall be in condition to command respect in the matter of ripeness. Central California has not been as partial to this market as Butte county growers, and the first new crop oranges to arrive here are expected from Oroville almost any day, though of course not in any considerable quantity for some weeks. Lemons are not doing well just at present, there having been, it is claimed by some, a lack of export market for some six weeks past.

Oranges, Late Valencia, # box.	3 00 @	4 00
Lemons—California, select, # box.	1 75 @	2 00
California, good to choice.	1 00 @	1 50
California, common to fair.	— @	—
Limes, Mexican, # 1000.	4 00 @	4 50

NUTS.

Walnuts and almonds continue firm, without noticeable change. Reports from the orchards show a marked decrease in No. 2's this year. The Exchange controlling the crop along the San Gabriel river is receiving a uniform price of 10c for first-class nuts.

California Almonds, shelled.	15 @	20
California Almonds, paper shell, # lb.	10 1/2 @	11 1/2
California Almonds, soft shell.	7 1/2 @	9
California Almonds, hard shell.	4 1/2 @	5 1/2
Peanuts, California, fair to prime.	4 1/2 @	5 1/2
Peanuts, Eastern, hand-picked.	6 @	6 1/2
Walnuts, White, soft shell, # lb.	10 1/2 @	11 1/2
Walnuts, White, standard, # lb.	9 1/2 @	10

Eastern Dried Fruit Market.

NEW YORK, Oct. 28.—Evaporated apples showed a little more steadiness. Common are quoted at 5@5 1/2 c; prime, 6@6 1/2 c; choice, 6 1/2 @6 3/4 c, and fancy at 7@7 1/2 c. Spot prunes are hardly as firm as recently and in some instances slight concessions are reported from recent prices. Quotations range from 3 1/2 @7 1/2 c for all grades. Apricots steady at 7 1/2 @10 c for boxes and 6 1/2 @9 1/2 c for bags. Peaches are fairly active at 12@16 c for peeled and 6 1/2 @10 1/2 c for unpeeled.

Available Grain Supply.

NEW YORK, Oct. 28.—Special cable and telegraphic advices received by Bradstreet's show the following changes in available supply since last account: Wheat—United States and Canada, east of Rockies, increased 4,187,000 bushels; afloat for and in Europe, increased 1,400,000 bushels; total supply, increased 5,587,000 bushels. Corn—United States and Canada, east of Rockies, increases 813,000 bushels. Oats—United States and Canada, east of Rockies, decreased 396,000 bushels.

FATTENING CATTLE AT LEMOORE.—Leader: Thirty carloads of cattle (1400 head) arrived in Lemoore recently and were taken to the Heinlein and Barron ranches, where they will be pastured and fattened for the market. The cattle were shipped in by J. F. Cameron of Newman. Another shipment of 1000 head is expected November 15.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

Dorloo, N. Y., Sept. 25, 1902.
Dr. B. J. Kendall Co., Enoshburg Falls, Vt.
Gentlemen:—Please send me your "Treatise on the Horse and His Diseases." I cured a horse with your Kendall's Spavin Cure that had two big Wind Galls. You can use my name if you like.
Very truly yours,
C. W. CALL.

A Plea for Better Cultivation.

To THE EDITOR:—Too few farmers realize the importance of deep, thorough and frequent cultivation as affecting the growth of plants and the dollars and cents return for a crop. As long as the soil is not actually baking they think cultivation is not necessary. This is a costly mistake.

Cultivation improves the mechanical conditions of soils for root system, purifies soils by admitting sunlight and air, saves moisture and renders fertilizers available to plants.

A well cultivated soil will settle in a week or two without being rained upon in the meantime, and the above-mentioned effects be partially lost unless the ground is stirred again. This settling of cultivated soils is partly equivalent to baking, because moisture is absorbed from the night air and dried by the day. This produces a slight compactness which must be broken up in order to have the best results.

In the preparation of land for a crop, a deep plowing and after-fining is of the greatest value, for when a seed sprouts and sends down its rootlet, the ground is open to receive it. The penetration is therefore deeper, its hold firmer and its feeding area larger. The plant does not then waste energy and life in opening the soil, and grows better. In time of drouth it is rooted deeper and is safer. This principle holds true for all sizes of plants and trees. It is the early good start which largely influences their after-life.

The conservation of moisture is affected by the mulch produced by cultivation. Loose, light ground is a poor conductor of moisture, and the more so if there is plenty of organic material that is desired to save, but rather the sub-moisture below the cultivator depth. That is the moisture the roots are drawing upon. When the soil settles again by its own weight it conducts some moisture to the surface. The lighter and more loose the mulch is kept the more effectively moisture is retained.

The way in which cultivation affects the availability of fertilizers is little known and little thought of. Plants take up water through their roots, but no solids, and the fertilizers which are applied to the top 6 inches of soil must so change that they can be carried by the waters which the plants take up, otherwise the plants could never get them.

Now there are many agencies at work accomplishing these changes. Among them are fermentation, heat, light and water. Every one of these agencies is made active by cultivation, and dormant by non-cultivation. The farmer who gives his corn an extra cultivation has a better crop than his neighbor, because he has aided the conditions which make fertilizers available.

There are many forms of plant food which unite chemically with certain soil ingredients and become insoluble. For instance, if acidulated phosphates are applied to soils containing an abundance of lime, iron or alumina, they take up the lime or iron and they can not be dissolved by water. In the same way potash salts may become a silicate of potash, which is also insoluble.

Fermentation is probably the chief agent for making these insoluble forms soluble again. It produces carbonic acid, which with water will dissolve what water alone would not. The heat of fermentation also helps. There are some four or five other acids of fermentation at work at this besides the direct action of the roots in corroding and dissolving insoluble substances.

This fermentation is produced from the organic matter in the soil and is wonderfully helped by cultivation. The process is a slow one naturally, but is increased so by frequent cultivation that the effect of a short season may be partly overcome, or a late planting made equal to an early one.

Suppose a farmer used manure or peas, or a blood or bone fertilizer. These must first decay. Now the little micro-organisms which convert decayed matter into nitrogen must have oxygen for its work. Cultivation supplies this.

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The more frequent and deep the cultivation the more actively the nitrifying germs can work, which results in more active growth by the plants.

The yearly fertilizer bill is one of the largest of every successful farm, and the quicker the farmer gets the most benefit the better. The best means to this end is cultivation, and it is simple and so cheap that it ought to be more freely used.

A farmer can lock dollars and cents in the ground by applying fertilizers, and then allowing the ground to settle. All the friends of plant life then become inert or disappear. The little nitrifying organism cannot get its oxygen. Sunlight is driven back from the soil it tries to warm only to dry and curl the foliage and the moisture which the roots are trying to absorb is carried straight to the surface and lost in the air.

CARROLL B. SMITH.

Redlands, Cal.

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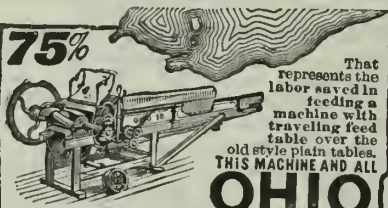


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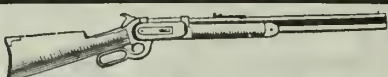
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Visits to Two California Farms.

By PROF. W. A. HENRY, Director of the Wisconsin Experiment Station, in the Breeders' Gazette.

California is nothing if not striking. At the present time there are millions of acres of land ranging from rough almost barren mountains down to level deserts as worthless without water as the Sahara. Then there are tracts that without irrigation are worth from \$200 to \$500 per acre for the crops of fruit and vegetables which they will grow. On the upper side of an irrigation ditch one will see a dusty plain covered with sage brush and inhabited by a few horn toads and an occasional rattlesnake. Below the ditch and in strong contrast will be a dark-leaved orange grove or a field dense with its wealth of alfalfa, both as productive and beautiful as any sight one can find anywhere. One finds the strongest of contrasts in comparatively brief distances of travel. May I tell Gazette readers in this communication of a visit to two estates, strikingly different from each other, though both are devoted for the most part to the rearing of Holstein-Friesian cattle? One is a mountain ranch with but a small fraction of its thousands of acres composed of level land, while the other is a dead flat below water level.

IN MARIN COUNTY.—It was a charming afternoon that my co-worker, Dr. Babcock, and I left San Francisco, passing across the bay by ferry to Sausalito, thence northward by the Narrow Gauge railroad to San Anselmo. All along the railway passing through the valley were the country homes of city people. At the station we were greeted by Mr. A. B. Hotaling, proprietor of Sleepy Hollow ranch, some 4 miles distant. Our journey from the station was along the floor of a narrow valley bounded by high hills. Soon leaving this main valley by a smaller one we were still more shut in and our crooked road seemed always about to terminate just ahead of us, but always there was an opening still a little farther on, and so for miles until the fine mansion and large stables were reached. The place is in the direct charge of Mr. P. R. Davis, one of our former short course students. Sleepy Hollow ranch comprises mountain sides. And such mountains! Their surfaces are smooth and rounded for the most part, though they reach some 1200 or 1500 feet toward the sky. In the winter they are covered with a luxuriant growth of wild oats reaching hip-high. At that season of the year it seems as if some Titan had been playing at farming and chose this region for a vast oat-field. The oat stems had all turned a rich golden yellow, there being no rain or fog to dim and dull through mold and mildew. These great billowy golden hills rising higher and higher were dotted here and there with giant live oaks, one of Nature's grandest trees. In some places the oaks form copses running up the depressions of the hillsides. The laurel green of such trees harmonized perfectly with the golden yellow carpet of oat stems.

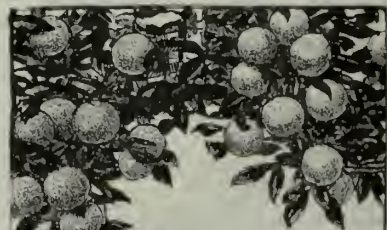
It would take a whole chapter to describe the beauties of the California live oak in its grandest forms, the smooth beach-like bark of the trunks and limbs. How the limbs in their strength are crooked but never bent and how they reach out long distances, sometimes almost horizontally! Yet they never break with their weight of foliage. A line extending round the branches of a single large tree would be 350 feet in length.

The place I am describing is an ideal one for a quiet country home. Not another property is in sight, for the crest line of the surrounding mountains forms the boundaries of the property. The silence which prevails morning and evening can almost be felt and quiet and peace reign supreme. A herd of 200 Holstein cows and flocks of high-bred pigeons constitute the live stock charms. Will Mr. Hotaling be able to maintain his Holsteins successfully on conditions so radically different from those prevailing where these cattle were developed to their present excellence in the lowlands of Holland?

There is no such mountain and hilly land in California especially adapted to dairy purposes that the experiment is well worthy of trial. Probably a lighter, more rugged form of cow will be the outcome. I have seen in the wildest parts of Switzerland a strain or race of Swiss cattle which, while closely resembling the Jersey, plainly showed modifications resulting from their mountain environment, and they were still splendid dairy cows. As long as memory holds I shall retain a most vivid impression of our delightful stay at Sleepy Hollow ranch.

IN THE TULE.—The second journey of Dr. Babcock and I was to the "tule lands" near Stockton. Geologists tell us that the interior of California was once a great arm of the ocean or large bay. Gradually the region filled with wash from the mountains until now there is a considerable tract of marsh lands north and south of Sacramento along the river of that name and along the San Joaquin river. These marsh lands are covered with rank vegetation, the principal plant being the tule, which is a coarse reed as thick as one's fingers and reaching to a height of from 10 to 15 feet. There are many cat tails growing in the tule lands also.

Taking a comfortable stern-wheel steamer in the evening at San Francisco we steamed up the bay into the Sacramento river, finally into the San Joaquin. In the morning before daylight we were on deck to see the strange country which we knew awaited our investigations. And a strange one it was! Both banks of the narrow stream were lined with great reed-like tules, reaching from the water's edge. No living thing was in sight as we steamed slowly along the slushy water excepting here and there a duck, a crane or a pelican, awakened from its dreams, flying heavily out of our way in the misty twilight. Soon we came to where the lands were diked on one side and then on both sides and it was as though we were traveling along a canal in Holland. Finally, 4 miles from Stockton, our boat run its nose into the bank at Pierce's Landing, Rough-and-Ready island. Mr. C. B. Pierce and his farm manager, Mr. P. C. Krog, a graduate of the Copenhagen Agricultural College, welcomed us. During our two days' stay we were driven about not only the 600-acre ranch of Mr. Pierce, but also over the whole island of 1600 acres. Rough-and-Ready island is surrounded by a dike or levee about 15 feet in height, with gently sloping banks. It is wide enough on top to comfortably drive a team and wagon. This strongly built levee is 5 feet higher than the highest floods ever known. Compared with the unreclaimed tule lands, a miracle had been wrought. Where once had been the tules and the home of the water fowl there were now rich rank meadows and pasture lands with peaceful herds. On his 600 acres Mr. Pierce is keeping nearly 300 head of Holstein-Friesians, young and old, and the place is not nearly stocked to its capacity. He is erecting substantial farm buildings and



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WILLIAM S. MYERS, Director, 12 John Street, New York

has a herd of the highest type of Holsteins. Not satisfied with the best as he procured them he is breeding and selecting for still higher results. To this end a representative of the agricultural college is nearly always present to conduct official tests for the Advance Holstein-Friesian Registry. Some wonderful milk and butter fat records have been secured and more are sure to come, for there are some splendid young things which will develop into most desirable dairy cows.

I wonder if I can make the condition of these reclaimed tule lands plain to the readers. For six months in California it rarely rains and this is during the summer. The winter rains suffice for a crop of grain and the growth of many early maturing plants. Then vegetation dries up and remains so for several months. Irrigation helps out in this region, making second and even third crops possible. A pipe is run through the dike or levee with a valve on the inner side. When the tide is up, water, which is fresh this far from the ocean, is let in through the pipe and conveyed by ditches to flood meadows and pastures. In southern California water is often worth \$1000 an inch—here it costs nothing. Flooding a meadow once will bring a hay crop, while the pastures should be flooded once every three weeks to keep in the highest condition of productivity. The favorite meadow plants are English rye grass, red and alsike clover and alfalfa. Mr. Pierce grows mostly rye grass and red clover. This year his first cutting of meadows yielded five tons of cured hay and second cutting three tons per acre. A pasture of twenty-five acres had maintained thirty-four head of cattle four months and was still useful at the time of our visit. White clover formed the finest carpet I have ever seen for that plant. Cattle graze the year round, the pastures being watered by rains in winter and by irrigation in summer. Cows are only put into the barns during the rain storms, but at other times in the so-called winter they are entirely comfortable while at pasture.

The conditions in California and Holland are both similar and unlike. They are alike in the wonderful fertility of the soil; they are much unlike in climatic conditions. In Holland water freezes several inches thick in winter and the winds blow raw and cold and the sun is obscured for long periods in winter time; even in summer time the North sea winds are so cold that plants like tomatoes and corn do not thrive. The coldest weather on Rough-and-Ready island produces only a thin film of ice. The geniality of the climate is best evidenced by the fruits which I saw growing on Rough-and-Ready island. While there I jotted down a list embracing the Bartlett pear, peach, nectarine, grape, quince, plum, prune, apricot, Persian mulberry, Italian chestnut, figs and pomegranate. A little group of orange trees, seen nestling under the levee on the north side, seemed contented and thrifty. The lands are best suited, however, to the growth of the grasses already named and to vegetable production. These reclaimed lands are usually leased for a cash rental to Italians and Chinamen, who sell their vegetables in San Francisco. The live stock possibilities of the region are, however, very great. The tule lands are indeed a region of wonderful interest, and charmed as I have been with the reclaimed lands of Holland, I must express a preference for the tule lands of California.

American Bridges, Beautiful and Ugly.

We have only to look at the bridges of Paris, of London, of Berlin, to see that good bridges are the rule rather than the exception in European cities, and that eminent beauty and monumental character, as illustrated by some of the newest structures, are compatible with the latest achievements of engineering in metallic construction. On the other hand, when we look at our American cities, we shall see good bridges a rare exception. New York, for example, has but one good bridge of note, in strict acceptance of the

term—the Washington bridge over the Harlem. The High bridge, close by, is part of an aqueduct.

Chicago, whose river gives it a superabundance of bridges, outside of its parks has not a single one worthy of the name. Boston is another city of bridges, but most of these are inexpressibly mean affairs. In the parks, to be sure, Boston has many bridges of striking beauty, representing a remarkable variety in design. One—the Longwood Avenue bridge, spanning the idyllic stream of the Riverway with a noble great arch—is for ordinary traffic rather than for park purposes. Some of the most deplorable of Boston's bridges cross the great channel which the railway tracks cut through the heart of the city. Of these, the Dartmouth street bridge in particular, hard by Copley Square and the public library and against the rich facade of the Back Bay railway station, is so aggressively offensive, with its steel truss-work of an excruciatingly distorted shape, that any expense would be justifiable to secure its replacement with something unobtrusively worthy of the site. But the tide in Boston appears at last to have turned toward the construction of good bridges. A handsome new bridge for combined parkway and ordinary traffic across the Neponset is one token of this tendency, but the most significant instance is that of the great new bridge to Cambridge under construction across the Charles river. Particular pains have been taken to give a monumental character to this bridge, which has received, prospectively, the name of the most beautiful in the United States.—Sylvester Baxter on "Art in Public Works" in the October Century.

The Problem of Homes.

The measure of the value of a paper is the amount of service it is to the people generally in the plain, practical problems of life. This is the measure which the PACIFIC RURAL PRESS applies to itself.

One of the most earnest and serious problems presented in every country, especially every new country, is the getting of homes. One of the most desirable things is knowledge of opportunities for getting them. Remembering these things, it is with pleasure that the PACIFIC RURAL PRESS presents such articles as those on the Tulare lake lands, given last week, and those on the rich bottom lands of Fresno county on the Kings river, the more upland, but none the less desirable, lands around Dinuba and Reedley, and the promising sections around Madera, Merced, Orland and Corning, some of which have been presented with illustrations and some without. Besides these, there are numerous other desirable sections, where the facilities for home-making are good, which will be presented in time—Stanislaus county, about Bakersfield, in Kern county, the Exeter-Lindsay-Porterville citrus region in Tulare county, the grape-growing regions in the northern part of San Joaquin and southern part of Sacramento counties, and others.

These presentations, and all others like them in the PACIFIC RURAL PRESS, are made, not on the basis of financial consideration, but purely because they are justified by the truth. Reaching over 10,000 people every week, as the PACIFIC RURAL PRESS does, they are of interest and value, not only to those who desire to make homes and want to know something in advance of the regions to which they expect to go, and to what they are adapted, but to those who have homes and want to know something about the State in which they live.

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Experience of a Government Teamster.

Wagoner, Ind. Ter., Dec. 21, 1900.
Dr. B. J. Kendall Co., Dear Sirs:—I am a teamster employed by the government. I have six mules and six horses under my care, and will say that I keep Kendall's Spavin Cure at hand and have used it with good results, especially on Collar Sores, Sprained Joints and Kicks, as it is next to impossible to keep mules in close quarters without some of them getting kicked. Yours truly, JAMES H. HENDERSON.

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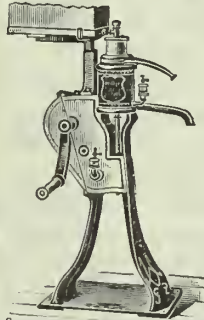
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Patrons of Husbandry.

Prof. Fowler's Observations in Europe.

By D. T. FOWLER, Conductor of Farmers' Institutes in Central and Northern California, in the Co-operative Journal.

The Pacific Coast Co-operative Union, at its last annual convention, which was held in Oakland, Cal., last June, elected me a delegate to represent the Union at the International Co-operative Alliance, which held its biennial session at Manchester, England, from July 21 to July 25, 1902. The Rochdale Co-operative Wholesale Co. of San Francisco, which is the central house, owned and managed by the system of Rochdale associations in this State, also made me their representative to this Alliance.

This congress was one of the most important held in England during the present year. Its membership was drawn from all nations, and all having the general and particular welfare of the plain people as their earnest, central thought.

It was marked, not alone by the scholarly and able papers and addresses delivered, the resolutions passed, the forward movements planned, and the great good cheer that came from the many reports of splendid achievements and progress made along the various co-operative lines of venture during the last two years, but in the high character and standing of the delegates who composed this congress. Many of them were men of national and some of international fame.

However, it is not my purpose in this paper to review or describe any of the work of the congress, but rather to give a few observations made, bearing upon the fruit industry of California.

Through the great English Co-operative Wholesale Society, located at Manchester, I was best able to study these questions and learn the demand that exists for fruit products such as we can supply from this State. This institution alone is a most important factor in the markets for cured fruit products, yet it buys only a large portion of the cured fruits that are required to supply the numerous co-operative contributive stores that are located in almost every city, town and hamlet of Great Britain. To give some general idea of the cured fruit purchases of the Co-operative Wholesale Society, at Manchester, the contracts for currants from Greece and seedless raisins from Smyrna, and known in the trade as "Smyrnas," will suffice.

Annually, in July, the Wholesale's buyer for these products goes to these countries and contracts for the year's supply of these dried fruits. I had the pleasure of meeting the gentleman a couple of days before he sailed for the Mediterranean on his annual buying excursion for the supplies for the coming year. From him I learned that he bought of currants and Smyrnas alone between 5000 and 6000 tons, and these large purchases were not sufficient to supply the demands of their wholesale trade for the year passed. This year he went with orders from the board of directors to make still larger purchases.

In the raisin districts of this State we are producing Thompson Seedless and Sultanas in ever-increasing quantities. These raisins, particularly the Thompson Seedless, are of the Smyrna type and will sell readily in the English markets. This field is worthy of careful investigation by our fruit growers.

The Wholesale's buyer has engaged to send me samples of the several grades of this year's crop of Smyrnas, with prices paid, that comparison may be made with our California products.

Of other types of raisins, the Valencias are the most popular. A very large trade in them is handled by the Wholesale. They keep a resident buyer at Denia.

A market for the best quality of seeded raisins may be developed. Unfortunately for the seeded raisin business, an English firm put up a seeder and threw upon the market a very undesirable product. This unfortunate venture has given the seed raisin a severe back-set, which time and a good, honest product only can retrieve. The

Co-operative Wholesale contracted with a California firm this year for a small supply of Fresno seeded raisins, with the idea of giving the goods a trial. These goods will be distributed among the various retail stores for introduction. If the quality supplied is as good as Fresno can furnish, I am assured that the seeded raisin will grow rapidly in popularity and favor with the English consumers.

The Co-operative Wholesale trade shows that cured Bartlett pears are a favorite fruit with the English industrial classes. They are more popular, as I was informed, than the cured peaches. The Wholesale buyer told me that the demand was large and continually increasing for this particular product. He remarked that they could sell an unlimited amount of this fruit if it was of first-class quality. Over-sulphured and over-dried fruits should be studiously avoided if we bid for this English trade. Bartlett pears are frequently over-sulphured, and I wish to raise a warning cry against this pernicious practice, for we will inevitably suffer in placing our cured fruits in foreign markets unless we use great caution in the use of sulphur. Our cured apricots, plums and prunes are highly appreciated in the trade, and the markets may be widely extended. This is particularly true of the better grades of our prunes.

Last year the Co-operative Wholesale sent their buyer of canned goods to California and made large purchases of our choice grades of canned fruits.

I have chosen to write only of the outlet of our fruit products through the Co-operative Wholesale Society of Manchester, England, for the reason that this institution represents a definite trade of large volume and importance, which I was able to come closely in touch with through the Co-operative Union.

The Co-operators of Great Britain number about 2,000,000 members, which represents a consuming population of about 10,000,000 persons. Thus it may be readily inferred that this great body of consumers should be generously approached as an important factor in the extension of the markets for the incomparable fruit products of our California orchards.

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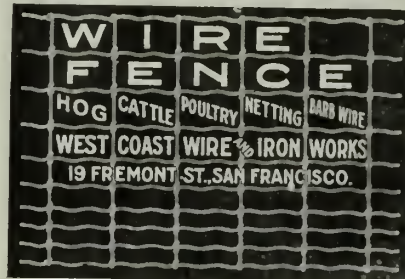
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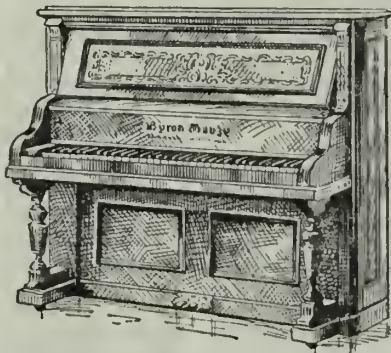
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Agricultural Notes.

DONE DRYING.—Fruit drying is practically completed in Sutter county.

PROSPECTIVE RAILROAD.—A survey has been made for a railroad from Lincoln to Vernon. Vernon is a natural shipping point.

NEW DIRECTORY.—The Kingsbury Co. is getting up a directory of Sonoma county, to cover every resident in the cities or country.

COAST APPLES.—At the fair at Ukiah last week L. Gonzales, L. C. Larson and Geo. Feldtman of near Mendocino City, showed apples of great merit.

SAUSAL FARM SOLD.—Napa Register: Leonard Coates has sold "Sausal rancho," his extensive fruit farm on the Big Ranch road to Jorgan Hanson of Fresno.

STAMPEDED SHEEP.—Two hundred and fifty sheep of a band of 3000, worth \$3 a head, belonging to Haile & Weltz, were stampeded over a 200-foot cliff on the Bidwell ranch by dogs last week.

RURAL TELEPHONE.—The orchardists just south of Yuba City will soon have installed a rural telephone system. A loop line will be put up between Marysville and Yuba City by the Sunset Company.

RAILROAD AND MATCHES.—The Diamond Match Co. will locate a large match-making plant at Oroville and build a railroad from there to extensive timber lands which they have bought in Sierras.

SOME BIG THINGS.—Argus: E. H. Green, one of Biggs' biggest blacksmiths, has completed a doubletree measuring 65 feet in length, for a large traction engine to draw an immense harrow of three sections, covering a width of 65 feet.

SLUMP IN TANBARK PRICE.—Mendocino Beacon: The bottom has dropped out of the tanbark market entirely and producers have a hard time getting buyers to take their bark that they had contracted. The strike of the tanners and extension to Willits of the railroad has resulted in overproduction.

GRAPE YIELD.—Sonoma Index-Tribune: The yield of wine and table grapes in the Sonoma valley is the heaviest known in years. The Santa Rosa Republican says that there were last week fully 5000 tons of grapes still on the vines around Cloverdale—in the vineyards of the Italian-Swiss Agricultural Colony alone 1000 tons.

POULTRY IN POLITICS.—Petaluma Courier: Candidates for legislative offices in this and neighboring districts where poultry raising is an industry have been active in putting themselves in touch with the demands of the business. The Poultry Keepers' Association has addressed a letter to the various candidates asking their views for the establishment of an experimental station.

THE WALDEN CANNERY.—Healdsburg Enterprise: Up to Oct. 24 the Walden cannery had shipped five cars of dried peaches, two cars of dried pears and fifteen cars of dried prunes; of canned fruits, twelve cars, and twenty cars of tomatoes; making a total of fifty-four cars sent out. Ten thousand cases of tomatoes have been put up. A shipment of dried fruit was made to South America.

LOMPOC APPLES.—Record: Apple picking is going ahead with old time vigor. The pack is the best and most perfect as to size, quality and freedom from parasites ever shipped from these parts. The price is about the average and the yield disappointing. The Simpson-Hack and Porter Bros. companies are packing. It has not been generally believed that choice apple land extended very far down the valley, and that only in spots could the fruit be profitable produced below the Fisher road. A visit to some of the orchards will soon dispel that idea. The fruit belt extends nearly 2 miles farther down and makes this the largest apple area in southern California. The prospect now is that Lompoc valley will, within a very few years, be cut up into small fruit farms and become one of the most noted sections for apple production on the Pacific coast.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING OCTOBER 14, 1902.

711,091.—PLOW—J. W. Barnes, S. F.
711,379.—FISH TRAP—P. M. Benseth, Fairhaven, Wash.
710,949.—SODA FOUNTAIN—E. J. Calley, Oakland, Cal.
711,098.—WAGON JACK—G. J. Carr, Oroville, Cal.
711,289.—STEAM GENERATOR—L. D. Copeland, Los Angeles, Cal.
711,290.—STEAM GENERATOR—L. D. Copeland, Los Angeles, Cal.
711,291.—STEAM GENERATOR—L. D. Copeland, Los Angeles, Cal.
711,042.—EXTENSION TABLE—S. Dusenbery, S. F.
711,102.—ROCK DRILL—A. D. Foote, Grass Valley, Cal.
711,047.—SAVING GOLD, ETC.—F. M. Grabam, San Jose, Cal.
711,157.—HARVESTER—G. W. Haines, Stockton, Cal.
710,981.—SEPARATOR—R. W. Jessup, S. F.
710,982.—SEPARATOR—R. W. Jessup, S. F.
710,983.—SEPARATOR—R. W. Jessup, S. F.
711,113.—GAS COCKS—A. E. Kraeger, S. F.
711,068.—VISES—McMabon & Lindgren, Spokane, Wash.
711,331.—SLAG STEAM GENERATOR—G. Mitchell, Naco, Ariz.
711,332.—SLAG STEAM GENERATOR—G. Mitchell, Naco, Ariz.
711,333.—SLAG STEAM GENERATOR—G. Mitchell, Naco, Ariz.
711,294.—POULTRY FOUNTAIN—F. Pohley, Windsor, Cal.
711,076.—HYDRAULIC RAM—J. Richards, S. F.
711,079.—CHECK BLOCKER—F. W. Smith, Campbell, Cal.
711,359.—WOOD COUNTER—T. A. Smith, Azusa, Cal.
711,453.—TELEPHONES—W. F. Smith, S. F.
711,135.—WATER CLOSET—J. Stewart, Los Angeles, Cal.
711,086.—PISTON PACKING—R. P. Vivian, Los Angeles, Cal.
711,088.—POTATO SLICER—W. H. Weaver, Colfax, Wash.
711,144.—MEASURING APPARATUS—A. C. Wright, Berkeley, Cal.
711,450.—WIRE FASTENER—G. H. Wright, Spokane, Wash.

Notices of Recent Patents.

Among the patents recently obtained through Dewey, Strong & Co.'s SCIENTIFIC PRESS U. S. and Foreign Patent Agency, the following are worthy of special mention:

HARVESTER.—No. 711,157. Oct. 14, 1902. G. W. Haines, Stockton, Cal., assigned to the Houser & Haines Manufacturing Co., a corporation of Stockton, Cal. The purpose of this invention is to improve what are commonly known as "two-wheel sidebill harvesters." The improvement consists in a method for raising either one of the driving wheels, as desired, and at the same time lowering the other one by means of long screws so connected with the axles of the driving wheels that said wheels can be adjusted at any desired height and held there. In this construction there is no chance for the least possible wobble to the machine; it is staunch, perfectly adjustable and in every sense practical.

PLOW.—No. 711,091. Oct. 14, 1902. J. W. Barnes, San Francisco, Cal. This invention consists in a plow, the combination of a moldboard having a groove along its lower edge, and a reversible share baying symmetrically concaved sides, pointed ends, and a tongue on one edge of lesser length than the share, said tongue adapted to fit and lock in said groove.

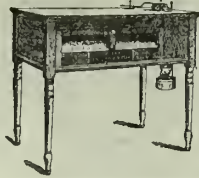
WAGON JACK.—No. 711,098. Oct. 14, 1902. G. J. Carr, Oroville, Cal., one-half assigned to Geo. M. Sparks, same place. The object of this invention is to provide a portable apparatus of simple construction by which the four wheels may be lifted simultaneously from the ground for purposes of washing, greasing, painting, repairing, etc. It consists of a wheeled base including longitudinal and cross bars; rock shafts journaled across opposite ends of the base and having their ends bent at right angles to form arms, a wagon-supporting frame carried by the arms, said arms at one end of the base being longer than those at the other end of said base; a centrally disposed lever fulcrumed at one end to one of said rock shafts; and links secured to the lever at a point between the fulcrum and outer end, said links diverging towards the sides of the wagon-supporting frame and secured to said frame at a point between the rock shafts.

POULTRY DRINKING FOUNTAIN.—No. 711,224. Oct. 14, 1902. F. Pohley, Windsor, Cal. This invention consists in the combination in a poultry fountain of a horizontal tubular closed reservoir, hangers by which it may be removably attached to the upper part of a crate, a second reservoir parallel with and at a distance beneath the upper one, a water pipe extending from the bottom of the upper reservoir to a point beneath the surface of the water in the lower one, an air pipe extending from approximately the water level of the lower reservoir to the upper part of the upper one, drinking openings in the upper part of the lower reservoir, said openings not extending to the ends of the reservoir where said ends form cup-shaped receptacles substantially as herein described.

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PATENTS

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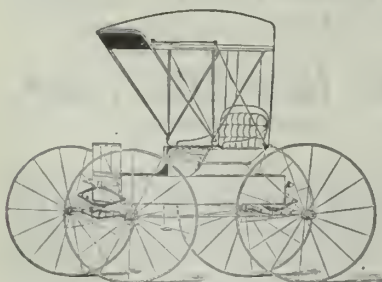
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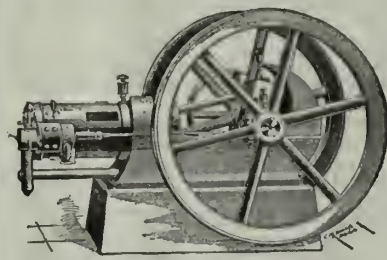
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 19.

SAN FRANCISCO, SATURDAY, NOVEMBER 8, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Nevada State University.

We are glad to have opportunity to show a neighborly satisfaction over the progress of the chief educational institution of our sister State on the east and to show our readers its distinguished president and a general view of the buildings in which his well-selected faculty and its large numbers of pupils do their work together. The last annual register shows a total of 414 pupils, of which 231 are young men and 183 young women. This attention to higher education is very creditable, and the number of pupils collected is gratifyingly large considering the population of Nevada. The State University is the head of the educational system of the State, and is in fact the only institution of college grade in Nevada. It is eligibly situated at Reno, a thriving town of 7000 inhabitants, and has a campus of nearly forty acres beautifully located on an eminence overlooking the city. There are nine buildings now in use, eight of which are shown in the accompanying engraving, and they show in a general way the housing of the institution. They include very creditable equipment for instruction, and yet the University shares with other of the newer institutions of the farther West the embarrassment of inadequate space for the fullest discharge of its work.

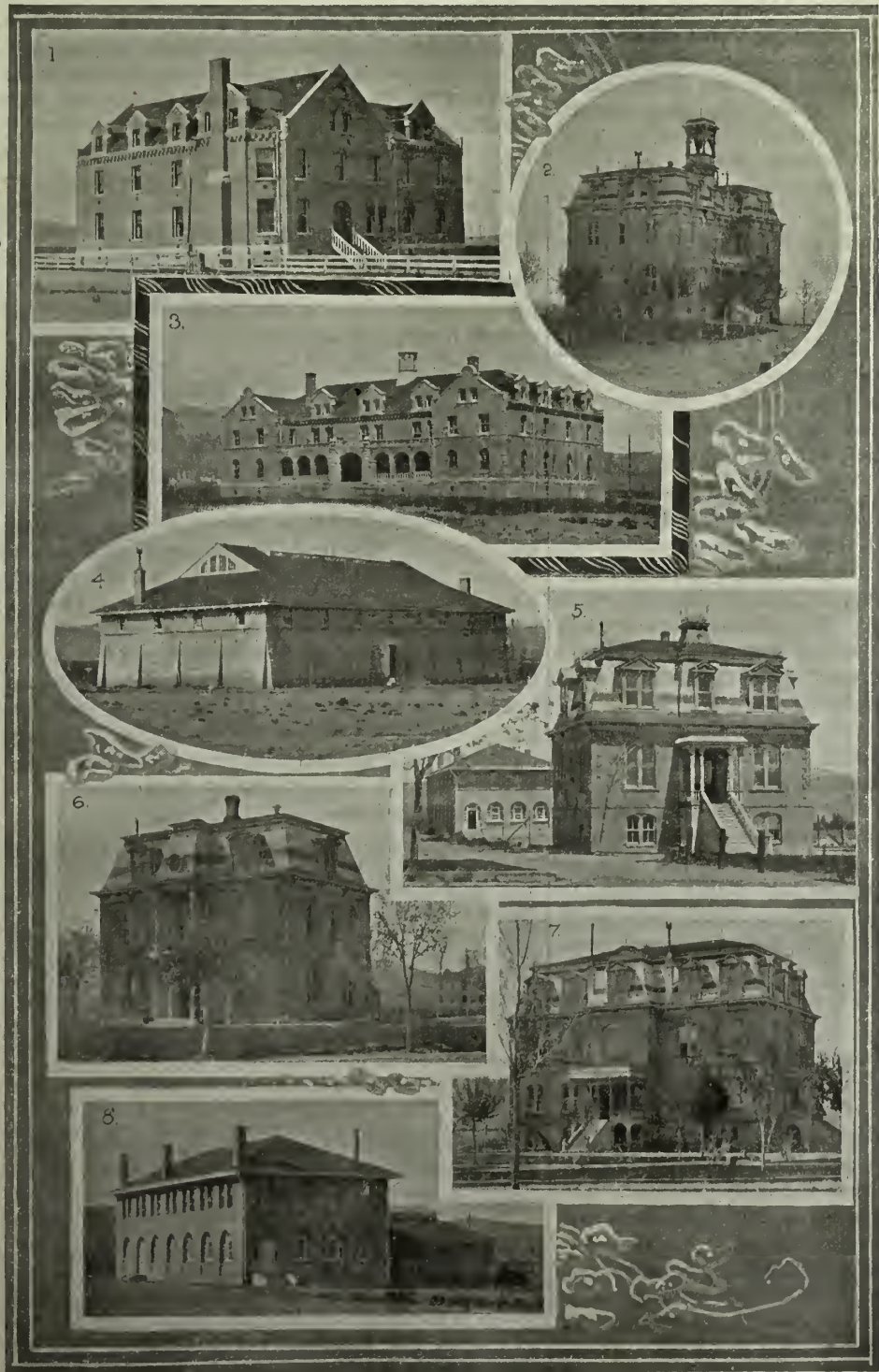
The president of the University, Dr. J. E. Stubbs, is a widely known educator and was thoroughly fitted for his work by his training at the Ohio Wesleyan University and by experience in the several positions to which he was called in Eastern institutions before coming to this coast. We are particularly drawn to him by his earnest work for the promo-



Dr. J. E. Stubbs, President of Nevada State University.

tion of agricultural education and agricultural science. He occupies a prominent position in the councils of the Association of American Agricultural Colleges and Experiment Stations and held the presidency thereof during 1899 and 1900. At the long-to-be-remembered meeting which this body held in San Francisco, and which was attended by leading educators from all over the country, Dr. Stubbs contributed greatly to the success of the occasion and demonstrated to the acceptance of all that the inspiring activity and energy of the Pacific coast comport well with the qualities of a scholarly gentleman.

Dr. Stubbs is director of the Nevada Agricultural Experiment Station, which is at the University in that State as in California, and it is in fact, chiefly because of the work of this station, that it occurred to us to give our readers a glance at the Nevada University. The Station staff at Reno is well known in California. Prof. R. H. McDowell, who has the branches of agriculture and animal industry, has published bulletins which are very suggestive in some parts of California. Prof. N. E. Wilson has participated very acceptably at our dairy conventions. We would speak particularly at this time of the work of Prof. P. Beveridge Kennedy, botanist and horticulturist, and Instructor S. B. Doten, entomologist, who have jointly completed a piece of exploration and economic study which we regard as one of the most important which has been done for the advancement of its State by any Pacific coast station. This work is a careful exploration of the Nevada ranges, the report of which will be of great and lasting value to the development not only of Nevada, but of adjacent parts of California. On another page of this issue we give an opening chapter of this report, from which the reader can judge for himself of its pertinence and value. Later parts which we shall present in future issues will give our readers a very definite idea of the present features of Nevada ranging and of the plants, both good and bad, which are chiefly encountered. It is exceedingly important that the Department of Agriculture at Washington and the several stations on this coast are taking up this work in the promotion of the live-stock interests. All the way from Arizona to Washington we are advancing toward better understanding of range conditions and of ways by which they may be bettered. Nevada has taken place in this work, and the preliminary showing of results by Messrs. Kennedy and Doten promises that much will be accomplished by their undertaking.



The Buildings of the Nevada State University at Reno.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, November 8, 1902.

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The Week.

We go to press the day after election and in the wake of unsettled affairs which usually follows such a stirring event. Evidently the country is safe, although the statistical experts are not yet sure exactly how it has been accomplished. On the whole it has been, in California at least, a campaign of much decency and self-restraint, and nothing has occurred to mar the onward course of local development. The favoring conditions of the last few years will evidently be continued. Prices may be temporarily unsettled, for people have been too busy to trade largely, but the sound condition of values and traffic remains and greater activity will be manifested as chances for commercial disturbances have been removed.

Since last week's rains beautiful weather has generally prevailed and winter work is going on well. Everything is favorable for a good year out of doors to all who fitly labor for it.

The wheat situation is still strong, though high holding and careful bidding do not work out in large transactions. Disengaged ships reach more than twice the tonnage of the same date last year and charter rates are less than half as much. Wheat futures are less strong than spot and Eastern markets and statistics are on the side of the bears—though at the close the outlook is good, the Australian demand acting well. Barley is rather quiet, though prices hold up well. Oats are doing well. Beans are being shaded a little and are easier. Millstuffs are still high. Hay is in light receipt and firm. Fresh meats are steady. Butter and cheese are firm and fancy ranch eggs in light supply. Poultry is well worked off though Eastern arrivals are free. Fine young chickens are in request, while old birds are less active, and turkeys are quiet. Fancy Salinas Burbank potatoes are still in sharp demand and sell well, while river potatoes are easy. Sweet potatoes sell well. Onions are unchanged. New crop of oranges from Butte and Placer counties bring full prices. By steamer to Australia 200 tons of citrus fruit went out—the largest shipment of this kind ever sent across the Pacific ocean. If this shipment is landed in good condition, an outlet in that direction is expected. Fancy apples are still high. Oregon apples are coming in by rail. Dried fruits are selling well with fine apricots in the lead. The Raisin Growers' Association has advanced prices 1/2c per pound on 2 and 3-crown loose Muscatels and 10c per twenty-pound box for 2 and 3-crown London Layers. Prices for the other grades remain unchanged. Honey prices are about the same. The wool trade is described in our

Market Review. The trade is hardly as active as described.

The Fruit Growers' Convention of December 26 in this city will have another chance to proclaim against the private cars which keep the railways from being as magnanimous as they desire to be. The private car company is the "wicked partner" which is always keeping the railways from realizing millenarian philanthropy in management. The growers thought they had the wicked partner expelled from the business, but they are disappointed, for it is announced that the Southern Pacific road has renewed its three-year contract for the use of Armour & Co.'s refrigerator cars in the California fruit traffic. It is stated that the Santa Fe had persisted in its refusal to renew its contract with the Armour Company and will insist upon using its own cars, over 4000 having been built by the company during the last two years. The Southern Pacific Company, however, claims to have succeeded in getting a reduction in the cost of using the cars. The railways, according to report, "hoped to eradicate the alleged evil of the ownership of private cars, which costs the railroads of the country over \$10,000,000 yearly in mileage charges and is a constant source of rate demoralization." It is too bad that Armour is able to hold up such well disposed corporations which are credited with great power to do what they like. He apparently has more influence than all the producers of California and if these producers could organize with Armour for president and general manager, it would be a great scheme. But let all come to the convention and hear Mr. R. D. Stephens about the situation.

And now the immigration authorities at New York have held up a lot of Cuban children who came consigned to a crank community in California until the California Immigration Commissioner can ascertain whether the California community is a proper place for the children to go. It is well that such investigation should be made. We have had too many importations of young people to be placed in the charge of people who have come to California to work their fellow men in various ways. The climate is good, and in too many cases the children have had to live largely upon it while performing menial tasks instead of being educated in practical arts as promised their trustful parents and guardians. Some swindles of this sort have given the State a bad name to which it had no sort of desert because the swindlers and the swindled all were from abroad. This sort of thing should be stamped out, and the proposed examination into the community in question will do no harm if the community is all right.

Those who are interested in the work of restraining the mining debris from ruining low lands and streams, as described in the PACIFIC RURAL PRESS of August 30, will be pleased to know that the work is to proceed forthwith. The announcement is made from Marysville that the War Department accepted the bid of the Atlantic, Gulf & Pacific Company for \$27,940.50 for the construction of the first of four great barriers to be thrown across the Yuba river, 10 miles above Marysville. Representatives of the contractors have reached the place and work on the mammoth dam will be begun at once. The greatest difficulty lies in getting the necessary lumber over the roads. A big force of men will be put to work so as to rush matters before high water comes. As we are likely to have a heavy winter this year it will be a good thing to be sure that the debris stays where it is.

The growth of our trade connection with Pacific countries is apparent in the report that the Messageries Maritime de France, a French line of steamships, is negotiating for entrance to San Francisco for the purpose of obtaining part of the trade between this port and the Hawaiian Islands, and Australia. The Far East and Europe, New Caledonia and Tahiti also will be on the route proposed. The Messageries Maritime is one of the largest fleets sailing between European, Australian and Asiatic ports. It has sixty-two vessels, and a total tonnage of nearly a quarter of a million. It also has a service down the west coast of Africa, besides one covering the whole Mediterranean sea and the Black sea. It will be of great advantage to have another hold on the outside world such as this transportation line offers.

QUERIES AND REPLIES.

Asparagus Rust in California.

TO THE EDITOR:—Inclosed you will please find a stem of asparagus covered with rust. All the plants above ground are being killed by it; as yet the roots seem unaffected by it, but the new shoots are covered soon after coming above ground. I have a large seed bed similarly affected and hence desire to know if the disease will kill the succeeding years. This summer has been unusually foggy and cool. I have never noticed the rust before, and not until a month ago. I wish to know what would be desirable to do under the circumstances.—GROWER, Haynes, Los Angeles county.

TO THE EDITOR:—Inclosed you will find a branch of asparagus with rust on it which developed in the patch in the last week. Please let me know through the PACIFIC RURAL PRESS if it is the Eastern rust?—SUBSCRIBER, Tia Juana, San Diego county.

We recognized on the specimens sent by both correspondents the asparagus rust which is working such havoc at the East. It was supposed that it had not yet secured entrance to this State. We had repeatedly requested readers to advise us immediately if they noticed any disease on their plants, and until the above were received nothing was reported. It is true that years ago the late Dr. Harkness, a professional mycologist, recorded the disease near Sacramento, but he was either mistaken or the trouble was stamped out, for subsequent examination did not disclose it. So sure was the State Board of Horticulture that our State was free from the disease that on September 25 the following was adopted:

RESOLVED, All asparagus roots and seed raised in any place outside the boundaries of the State of California are hereby prohibited from being planted or offered for sale, gift, or distribution within the limits of the State of California.

As soon as the specimens were received from our correspondents in southern California we reported the matter to Mr. Alexander Crow of the State Board of Horticulture, that he might have full time for official effort to act in suppression of the evil in advance of publication. Mr. Crow proceeded in his usual energetic manner and we believe everything has been done to prevent distribution of the disease from the sources reported to us. Local investigation by the county horticultural commissioners interested has, we understand, brought to light some other cases—all so far in southern California and remote from our chief growing and canning districts. The cases found have been given heroic treatment, the beds being covered with dry litter and burned over. The roots also are to be thrown out and burned on the spot and the ground planted to something else. In this way the succession of the disease may, it is hoped, be prevented.

It is of the highest importance that every asparagus grower at once make careful examination of the summer growth of his plants, if he has not already burned it over. We shall be glad to receive for examination anything that has an abnormal look, that every occurrence of the trouble be at once detected. Concerning the destructive character of the disease and the desirability of excluding it from our commercial fields, the following from Mr. A. F. Woods, pathologist and physiologist of the Bureau of Plant Industry, U. S. Department of Agriculture, is of pressing importance:

Asparagus rust (*Puccinia asparagi*) is a native of Europe, and was introduced into New Jersey in 1896, and in the succeeding four years spread over the whole eastern and central United States, doing an immense amount of damage. It now occurs as far west as Nebraska and the Dakotas, and it is probable that it occurs nearly everywhere east of the Rocky mountains. It will be a difficult task to keep the rust out of California. The greatest danger lies in the introduction of the rust in young plants from the East, and to make any quarantine effective the importation of asparagus roots or plants from east of the Rocky mountains would have to be entirely prohibited. If the California growers now purchase any plants from the Eastern States it will be practically impossible to avoid the introduction of the disease in the near future. It will be impossible to determine, from an examination of roots of young plants, whether or not they are affected by rust, as the fungus lives inside the tissues of the plants and does not appear on the outside of the plant until it is nearly grown, when it bursts through the stem and leaves in the same way that the grain rusts do. No distinction can be made between healthy and diseased plants, as far as importations into California are concerned.

The importation of asparagus seed will also be at-

tended with considerable risk. It is not probable that the rust fungus exists inside the seed, but in the process of gathering and cleaning the seed will come into contact with the rusty branches and get covered with the spores of the fungus.

The fact that this disease has appeared in isolated instances in this State does not diminish in the least the importance of the effort of the State Board of Horticulture to prevent its access to our largest growing districts. Growers and seedsmen should take the most active precautions that roots or seeds are not taken from any locality whatever where the disease is known to exist or to have existed. We have too much at stake to take a single chance in this direction.

Fresno Sand for Prunes.

TO THE EDITOR:—Would the Sugar prune on almond stock succeed on land described as "Fresno Sands," in the "Soil Survey Around Fresno," by Thomas H. Means and J. G. Holmes. Land can be irrigated from about April 1 to July 31. This land is good for peaches, but the cost of pruning and caring for peach trees, and the high cost of getting the cured fruit into the sweat box—\$30 to \$40 per ton—and the low price received—\$80 to \$90 per ton—somewhat discourages peach planting for drying. There are some kinds of grapes that do well on this land, but the phylloxera has got me scared. Any advice you can give me will be appreciated.—SUBSCRIBER, Oleander.

The Sugar prune does well on almond, and the almond is probably the best root for the sort you describe, except where the water may have been unduly raised by irrigation. We do not, however, like the proposition of turning to prunes to avoid cost of pruning, etc. We have already too many prune orchards running on low-cost lines. There are some locations, too, where the prune does not bear regularly, or when bearing does not reach highest prune quality. The peach well handled pays its way well, and personally we would rather take our chances on a peach investment than a prune in the Fresno region. Few places can compete with that region with the peach, and there are many regions that can do better with prunes. As for the grape phylloxera, too many people are scared already. The French wine crop was almost wiped out by it twenty years ago, but is now larger than ever. We can do as well in California and we shall.

Apples for Shasta County.

TO THE EDITOR:—Is the Duchess a better and more profitable market apple than the Gravenstein for upland near Anderson? Is the White Arctic better for the same purpose than the White Astrachan? Do you think Skinner's Seedling will do well here?—S. HILTON, Shasta county.

The Duchess is a safer apple than the Gravenstein in the interior. The latter is shy in some places, but on the mountains might be expected to do better than in the valleys. The White Astrachan is very satisfactory in the upper Sacramento valleys and foothills. The White Arctic we do not know. Skinner's Seedling ought to do well, but it has not been sufficiently tried in interior situations. It has very fine foliage, which is a good point for a hot region. Can our Shasta county readers help with accounts of their experience?

Prune Fed Pork.

TO THE EDITOR:—Please inform me whether the experiment of fattening hogs with small sized dried prunes has ever been tried or not, and if so, what are their relative value as compared with wheat or barley.—A SUBSCRIBER, Kernville.

Yes, prune feeding of hogs has been tried to some extent. Analyses of the substances you mention show that 100 pounds of dried prunes are equivalent to 82 pounds of barley or to 84 pounds of wheat for feeding purposes.

Attractions for Gophers.

TO THE EDITOR:—Will you kindly inform us whether or not the planting of potatoes among young fruit trees is detrimental to the latter on account of attracting gophers—more than corn and beans would do? It is sometimes said that the after effects of two or three years of potato cultivation in young orchards is almost fatal to the trees, the gophers being still attracted by what remnants there are of the potato crop.—A SUBSCRIBER, Watsonville.

We presume what is said about the prolonged effects of potato growing is true where scant summer cultivation allows some potatoes to continually volunteer and form some small tubers which are

toothsome to the gophers, or where the climate is mild enough to allow the potato to steal a march by growth during the rainy season. You are surely likely to have more gophers in a potato than in a corn or bean field, and young trees will suffer most where most gophers are.

Dieback in Apples and Plums.

TO THE EDITOR:—I have fifty or more eight to ten-year-old Ben Davis apple trees suffering from some difficulty. A few of the worst are ruined. Some are only affected on one side. The top twigs suffer most. The leaves are yellowish brown. The twigs, after starting, seem to labor under some great difficulty—the side buds have no leaves; the leader, seemingly discouraged, sends out numerous side twigs, only in turn to fail, giving the tree an unusually bushy or broom-like appearance. In the worst cases the leader dies. The lower limbs continue to thrive. The tree ceases bearing—at least on the part affected. Trees that seem uninjured bear lightly (green apples were numerous in the orchard last summer). I am told that bud blight is the cause, but would like further information. Bradshaw plum trees and Italian prunes near by seem in a few cases suffer in about the same way, but no twigs are dead on them yet. They just cease bearing or the fruit is small, leaves seem unhealthy and drawn up. Please inform me through your valuable paper the cause and remedy.—JAMES SHEARER, Payette, Idaho.

It seems to be a case of dieback from inhospitable conditions in the soil. The twigs show no sign of disease known to us. Dieback may occur from a waterlogged subsoil resulting from lack of drainage to allow escape of excessive water either from rainfall or irrigation. Dieback also occurs from exactly opposite conditions, viz., the lack of water enough to support the tree in attaining vigorous growth and maintaining sap flow to carry on growth and compensate for evaporation. There is also dieback from intrusion of frost during the growing season of the tree. There are no very striking differences in the effects produced in the twigs by these causes, except that the frost injury may come upon well-grown twigs. Our correspondent's specimens are not well grown; they are scant and dwindling. The presumption is that the trouble is either lack of moisture or excess of it in the subsoil. The remedy in the first case is irrigation, in the second drainage.

Small Irrigation Plant.

TO THE EDITOR:—I wish to irrigate about two acres of garden, soil deep, sandy loam underlain with gravel, and abundance of water within 15 feet. I can get good well by driving 1½-inch pipe. Will that do for irrigating? If so, what kind of pump should I use, and what will be the most satisfactory power to run it? About how much water per hour will I be able to get from a well of that size.—SUBSCRIBER, Eugene, Oregon.

If you have a fairly good place for wind you ought to be able to get all the water you need with a windmill. The size of mill and pump best under your conditions will be figured out for you by those selling such machinery, and if they are well established firms having a reputation to maintain they will not mislead you if they can help it. Under ordinary conditions of wind in an open country, a good 12-foot geared windmill and a good pump will give you enough water to cover the whole area of your two acres 1 inch deep every ten days or 3 inches deep every month. As you will never wish to cover the whole area at one time and will always have some roads, etc., to keep dry, this water ought to keep you going well. You will need, however, a good tank or reservoir to store up the water until you get head enough to distribute well. We cannot tell how much water you get from a well of that size—it depends on the well, but presumably it will yield more than such a mill can raise.

Harlequin Cabbage Bugs.

TO THE EDITOR:—What are the insects I send, and how can I rid my garden of them? They are very numerous and have destroyed my crop of cabbage and squash vines, both this and last year.—W. J. PLEASANTS, Winters.

They are harlequin cabbage bugs, but they will take many other things as well, as your experience shows. They are sucking insects and cannot be poisoned. They can be killed by kerosene emulsion, though they do not die very easily. They can often be driven off by dusting them and the plants with air-slaked lime in which kerosene has been stirred at the rate of a tablespoonful of oil to a quart of lime.

Hulling California Black Walnuts.

TO THE EDITOR:—Is there any process of taking off the hulls from the California black walnut?—W. A. THRELFALL, Stanislaus county.

We know of none which is practiced to any extent and no particular reason why there should be, for the nuts are of too little commercial account. The black walnuts do not have a parting shell; the shell has to partially decay and then fall away. When the hull gets into satisfactory disintegrating condition the nuts can be cleaned in a revolving barrel with staves of slats or wire, which keeps the nuts falling or rubbing against each other, while the hull powder escapes through the slats. Perhaps some reader can tell a better way.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 4, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cloudy and foggy weather during the week was unfavorable for fruit drying. Light frost in the vicinity of Sacramento Saturday morning caused no damage. Nearly all the prunes and raisins are cured and stored. Orange picking has commenced in Yuba and Butte counties and shipments will be made this week; the fruit is well developed, but unfavorable weather has retarded coloring. The soil is in fair condition in most places and plowing and seeding are progressing rapidly. Some early sown grain is up and looking well. Green feed has made a good start and will soon be plentiful. Stock are in good condition.

COAST AND BAY SECTIONS.

The weather was partly cloudy or foggy most of the week and the temperature nearly normal. The rain of the preceding week caused considerable damage to prunes and peaches on trays in the Santa Clara valley and to late grapes on the vines in the northern districts. It is reported that the fruit shipments from San Jose this season are the largest ever made from that section; the packing houses are running night and day. Citrus fruits are in excellent condition. New grass is making rapid growth in the northern districts, and green feed will soon be abundant. Corn picking and potato digging are progressing. Plowing and seeding have commenced.

SAN JOAQUIN VALLEY.

Generally clear weather with pleasant days and cool nights prevailed during the past week. Late frost occurred in some sections on Saturday morning but caused no damage. The prune and raisin crops on the trays are drying very slowly, owing to the cool nights. The second crop of grapes is being gathered and shipped to the wineries. Egyptian corn is being harvested. The first carload of this year's orange crop was shipped from Porterville on Friday. The fruit was well colored and of fine quality. Plowing and seeding are progressing rapidly, although more rain is needed to loosen up the ground in many places. Stock of all kinds are in good condition.

SOUTHERN CALIFORNIA.

Conditions during the week were unfavorable for raisin making, owing to foggy or cloudy weather and heavy dews. A considerable portion of the raisin crop in San Diego county has not yet been cured, but it is estimated that the yield will be three times that of last season. No damage resulted from the rain at close of last week. Walnut picking continues slowly, and the harvest is ten days later than last year. Citrus fruits are in excellent condition. Pasturage was benefited by the rain of last week.

LOS ANGELES SUMMARY.—Warm weather following the rain is starting feed in the northern sections. Walnut and bean harvest about finished; in places bean crop less than last year; walnut crop large. Dry plowing in progress. Citrus fruits coloring in some places.

EUREKA SUMMARY.—Weather conditions during the past week generally favorable for late crops. Grass is making rapid growth. Plowing will soon commence. Over two-thirds of the apples gathered.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 5, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.66	3.30	6.82	5.32	60	40
Red Bluff.....	.04	3.48	3.90	2.53	72	41
Sacramento.....	.00	1.68	2.12	1.81	74	44
San Francisco.....	.00	1.70	1.42	2.06	66	50
Fresno.....	.00	1.40	1.15	1.56	74	42
Independence.....	.00	.37	1.07	.71	70	38
San Luis Obispo.....	.00	2.00	2.86	2.20	78	46
Los Angeles.....	.00	.39	2.00	1.07	78	50
San Diego.....	.00	.96	.34	.66	72	56
Yuma.....	.00	.11	.22	1.04	90	48

THE RANGE.

Summer Ranges of Western Nevada Sheep.

NUMBER I.

By P. BEVERIDGE KENNEDY and S. B. DATEN in Bulletin 51 of the Nevada Agricultural Experiment Station at Reno.

THE UNDERTAKING.—The members of the botanical department of the Experiment Station spent the summer of 1901 from June 1st to August 1st on the sheep ranges of the Sierra Nevada. They traveled on foot from near Pyramid lake to Sierrav valley, thence by way of the Little Truckee to Webber lake, and from there to the American river, studying and collecting the plants and grasses on which the sheep feed.

There are many things that make this work important. The part of the Sierra they visited is the principal summer range of many of the most prominent sheep owners in western Nevada; and so in these mountains many sheep feed every summer. Now, while this region is an excellent grazing country, there are nevertheless many parts of it where overstocking and dry seasons have greatly injured the forage in both quantity and quality. If in future years the number of sheep is increased this injury will be aggravated, and will become much more widespread, perhaps disastrous.

The time has therefore come when an exact knowledge of the whole matter is highly important. The facts of the case are of course in the main already known to many sheep owners and to their more intelligent herders. They know quite accurately, that is, the plants that furnish the largest amount of nutritious food for sheep, and also which will best endure years of continuous grazing. This scattered useful knowledge, however, should be brought together and published in such a form that it may be easily referred to and may become more widely known.

THE DEPLETION OF THE RANGES.—Altogether too many sheep and cattle per square mile have been grazed on most of the ranges of the Western States, and, naturally enough, these ranges are not so good as they used to be; many sections are permanently injured, others made wholly useless. These depleted ranges should be made, if possible, as productive as ever by reseeding with the best native forage plants and grasses, and with the best ones from foreign countries. This is a matter of importance to the whole nation. It is especially important in the States where stock raising is a leading industry.

On the public lands competition among the leading sheepmen and cattlemen has been so severe that the ranges have become greatly depleted. In the Southwest this was not due to ignorance. The stockmen knew that the grass would not last forever. Each man planned to get all he could while it lasted. The demand for cattle was strong; each man bought all he could in order that he might sell twice as many a little later. The range was overstocked, and the grass was rapidly disappearing. The speculative boom continued until there came the inevitable reaction with its enormous losses. The depleted ranges of the Southwest will carry now only two-thirds as many cattle as they could have been made to carry. To a greater or less degree this is true of the government lands everywhere. The open ranges, like any range or any pasture, can provide forage for only a limited number of stock. Every stockman is trying to get all the grass he can while it lasts. There are too many cattle on the cattle ranges, too many sheep on the sheep ranges. The cattlemen vary this proposition by saying that there are apt to be too many sheep on the cattle ranges, and the sheepmen have the opposite complaint to make.

On sheep ranges rented from the railroad in the eastern Sierra Nevada, depletion caused by overstocking is not so widespread. As the sheep increase, too many may be put on one section, but in the main the sheepman knows about how many sheep his range will carry without injury, and does not exceed this number greatly. The desire to get rich quickly may lead him to greatly overstock his rented range, and then sell out—a short-sighted policy whose tendency is to force him out of the business.

Even on lands actually owned by the stockman destructive overstocking is not uncommon. This arises partly from thoughtless ignorance, and in part from lack of prudent foresight.

RESULTS OF OVERSTOCKING.—On any range land the number of animals which can safely graze there without injuring the forage is a limited number, much smaller in dry seasons than in those whose rainfall is more abundant. On a pasture too many animals will eat the grass too closely and soon trample it out. Bitter and thorny weeds will produce seed abundantly, for they will be left untouched. The disappearance of the grass which occupied the ground and choked out the weeds, changes the pasture into a weed patch. On an overstocked range for sheep or for cattle the forage is permanently injured in much the same way. The good plants are killed out; the bad ones survive because they have more room in which to grow. There is always a sort of warfare,

a struggle for existence, going on among all the plants which occupy the land. Remove the good plants, and you give the bitter and thorny kinds an excellent chance to grow and to spread. Thus a depleted range not only produces less good forage, but it is also likely to become overrun with useless weeds and brush—an injury which can scarcely be repaired.

There are two great classes of plants—the annuals and the perennials. The annuals come up every year from seed. The perennials come up every year from seed and from the previous year's roots. The nutritious annuals of good flavor on an overstocked range get little chance to produce seed. The perennials can not go to seed either; but this does not matter so much, for their roots live through the winter, and, so long as the crown is uninjured and the roots are not torn up, the perennials reappear every summer. The annuals are likely to disappear first on an overstocked sheep range; then the perennials grow dwarfed and stunted, and slowly die out; all the while bitter and thorny weeds and brush which the sheep have avoided have had a good chance to produce seed and to spread all over the country. When just about enough sheep, however, are grazing on the range, the annuals produce seed enough to keep on growing, and the perennials send more strength into their roots, which grow stronger and deeper, and so can produce a good crop of leaves and stems the next year.

Besides being injured by the destruction of nutritious plants, and the consequent increase of the poorer sorts, overstocked ranges are injured by the destructive changes in the character of the soil itself. Some soils are so loosened by the trampling hoofs of the stock that on the hillside the finest part is washed away by the rains. Other soils are hammered down so hard that the rain and the melted snow run off from the surface in the spring floods and are of little use to the thirsty plants.

CAN THE RANGES BE IMPROVED?—There is no use in talking about these various ways in which overstocking injures the range unless we are ready to consider some means of bringing the grass back on the depleted ranges.

Can the forage on the public lands be improved?

Is there any doubt that the public lands do not support as many sheep and cattle now as they did twenty years ago?

Are there not too many sheep and cattle on the government lands even now?

What will this lead to twenty years from now?

How can the past injury be repaired and how can further damage be prevented?

When the open range grows poorer every year, the stockmen are brought face to face with the situation. Perhaps they meet and agree to divide the range, each man to keep his cattle on his own land, the sheepmen to stay in their own division and the cattlemen in theirs. By this unlawful arrangement, new men are to some extent kept out of the business; and just so long as the agreement is held to, there is not so much reason for great overstocking of the range. A sort of order thus grows out of chaos. A kind of government replaces anarchy; but it is a government by the strongest, and there is sure to be strife among the strong ones. Perhaps one group of men holding one portion of the public range by force of arms or by force of agreement may decide also not to overstock their range and to improve it by sowing the seed of valuable grasses and forage plants.

This is not likely to occur, because the reseeding of a large tract is a costly undertaking, and one still so largely an experiment whose results cannot clearly be foreseen that no stockman will be likely to undertake the reseeding of lands not his own. How, then, shall the open ranges of the public lands be made fully productive again?

SUGGESTIONS.—A socialist has suggested that this should be undertaken by the General Government as a public work to be paid for by taxation of the whole people; that seed should be collected, enormous grass farms planted and that the seed raised on these farms should be sown far and wide on the ranges, and that the cost of all this enormous undertaking should be borne by the General Government.

It has also been suggested that the Government should reseed its lands and then rent them or lease them for enough to cover the cost of reseeding. This plan, like the socialist's dream, is open to many and conclusive objections. In reseeding by the socialistic method, the cost would be so stupendous and the opposition on the part of taxpayers so strong and so well founded that this method is wholly unsound in principle and impossible in application. Again, if the Government should reseed its lands and rent them, what guarantee could it exact that the reseeded lands should not once more be greatly overstocked?

By some means, however, the depleted public ranges should be made again highly productive. This is vastly important to the stockmen and the stock-raising States. It is indeed of real importance to the entire nation. If the methods suggested are not practical, it remains to find a method which will be just and reasonable, and at the same time really workable. Granted that reseeding is wise and necessary, what class of men is so familiar with the ranges and so well qualified for the work, both by self in-

terest and knowledge of conditions, as the stockmen themselves? Who can more justly be asked to pay for the reseeding? Now, of course, no man will scatter much seed over land which he does not own or lawfully control. If, then, the public ranges are to be made once more fully productive, they should be leased for long terms to the stockmen, for the stockmen should bear the cost of reseeding and they should reap the profits. The Government should, of course, help them as much as possible in this difficult and important undertaking.

It certainly seems that this leasing method will be the quickest and surest way of bringing the depleted range lands back to their normal productiveness. Should the Government lease its lands for long terms to the stockmen, it might well spend the money received from leases in helping the stockmen reseed their ranges—this by founding grass farms in the stock-raising States where the best native grasses and other forage plants might be tested, and where small quantities of seed might be raised for the stockmen to sow at the right time and in the right place. These large grass farms would of course be a part of the experiment station system.

A QUESTION OF PLANTS.—When the average man begins to think about restoring depleted ranges, he is apt to imagine that somewhere on earth, in Australia or in South Africa, or even in Siberia, there must be a wonderful grass or a salt bush, or something else which can be made to grow on his ranges high up on the dry mountains and down in the wooded, shady valleys, furnishing abundant food for all his stock. This is just as possible as it is to find a patent medicine at \$1 per bottle which will readily cure all diseases. It is almost always true that the plants best suited to any range are the ones which already grow there or which used to grow there. Of course there may be better ones growing in other parts of America, or in other countries in nearly the same kind of soil and climate; but it is usually true that any stock range will be benefited most quickly and most permanently by reseeding it with the best native plants and grasses. This is true because plants which have occupied the same territory for years, perhaps for centuries, have become perfectly adapted to the soil and the climate of the region where they grow.

The native plants may be restored in part by resting every year certain parts of the range, thus allowing the forage plants to produce seed. This method could be made far more successful if on the rested lands seeds of the right kind could be sown artificially. The seed, however, is hard to obtain and it is not always easy to decide which plants are really the best ones for this purpose.

EXPERIMENTAL WORK WITH PLANTS.—For artificial sowing a good forage plant should have the following qualities: It should, above all, be hardy and nutritious. It should be deep rooted. It should be well suited to the soil and climate in which it is to grow, and it should produce abundantly seed of such a character that it can be easily collected and sown. The leaves and stems should, of course, be full of those substances which go to make fat, muscle and bone in good sheep and cattle. Out of the hundreds of kinds of plants growing on the ranges there are only a few which combine all these various qualities of hardiness and nutrition. The experiment stations may very profitably co-operate with the stockmen in hunting for these few good ones and in gathering their seeds, testing it and sowing it.

Much useful work along these lines has already been done by the experiment stations in several of the Western States. In investigations of this kind station men and stockmen can well co-operate under the direction of the Department of Agriculture at Washington.

In Nevada these co-operative experiments could best be conducted in the following way: Small tracts of natural range land covered with natural plants and grasses should be put under fence. On these fenced areas seed could easily be gathered from the best ones growing there. Seed from other countries could be sown within the fence and tested. These little seed farms would soon yield very valuable information, and on them small quantities of seed could be raised for planting on other parts of the range. When it had been shown in this way that reseeding with some native or foreign forage plant is really practical and successful, the little experimental seed farm could be enlarged and cleared of brush, perhaps even irrigated if the location made this possible; and seed could be raised in larger quantities and scattered more widely.

Of course the reseeded tracts would then need a year's rest to give the new grass a start. Such experimental work as this could well be undertaken by any stockman who owns his range or leases it for a long term; but such investigations are more successful when they are carried on under the direction of the scientists employed by the Department of Agriculture. It may be that in time the Nevada Experiment Station will secure sections of range land here and there in the State, where with the help of the stockmen larger seed farms can be established.

If we had in Nevada such a system of experimental grass plats and farms as that described above, the stockmen of the State could make use of it in the following way: By fencing small tracts on the range

they would obtain good specimens of the more valuable forage plants and grasses together with their seed. Any stockman could then send specimens of these plants, cut at the right season, to the experiment station, where a chemical analysis would show their relative values as food for stock. The station men would also test the seed in experimental grass plats and find out whether it could be sown artificially with profit. The station would then send back to the stockmen a report saying that out of the plant samples and seeds sent in several, perhaps, are nutritious and hardy, and easy to sow on the range. The report would also include directions telling as far as possible the best and most practical methods of gathering the seed and spreading the good plants.

As all the experiment stations are, through their bulletins, in close communication with one another and with the Department of Agriculture, Washington, D. C., the Nevada station might well be able to suggest for Nevada stockmen plants and grasses very useful in other Western States and foreign countries that might be equally useful here.

NATIVE PLANTS AND THE SEED TRADE.—There is naturally a great advantage in sowing the seed of grasses and plants common in older and more thickly settled countries, for seed from these countries may usually be obtained in large quantities, while it is still a difficult matter to get the seed of the best of our native forage plants and grasses. In time, however, our enterprising American seedsmen will begin placing on the market the seed of those grasses and forage plants which make our Western ranges naturally such excellent grazing lands for sheep and cattle. Some of the foreign grasses and forage plants would undoubtedly be very useful in western America—as useful, perhaps, as the Australian salt bush has been in South Africa. There the salt bush, originally introduced from Australia, spread far and wide over the sheep ranges until it was thoroughly established and had produced seed abundantly. Meanwhile the improvident greed of the Australian sheepmen had led them to overstock their ranges and thus to so destroy their home supply of salt bush that they were obliged to reseed their depleted ranges with Australian salt bush seed imported from South Africa.

This salt bush is a hardy annual plant, coarse and weedy in appearance, but nutritious and capable of producing abundant seed. A rancher in Plumas county, California, planted some of the seed recently in a little piece of fenced ground. He didn't know what salt bush would look like and was soon much annoyed to find his bit of ground covered with great bunches of some new weed. As he is an industrious man he pulled up all these weeds, and months afterward found that they were the salt bushes he had been waiting for. There are probably many parts of Nevada where this valuable forage plant can be successfully raised, but it is not yet proven that this is really true.

The salt bush is, however, only one of many valuable forage plants and grasses which may prove very useful to Western stockmen. It is the aim of the Nevada Experiment Station to find out which native plants and grasses are the best ones and which ones, native or foreign, can most profitably be sown on Nevada's range lands. In this work we expect the hearty co-operation of sheepmen and cattlemen alike.

ENTOMOLOGICAL.

Remedies for the Peach Tree Borer.

By PROF. C. W. WOODWORTH, in Bulletin 143 of the University of California Experiment Station.

This insect is most abundant on peach and apricot trees, or on prune trees growing on peach and plum roots. It bores into the bark just beneath the surface of the ground, and is most easily recognized by the very characteristic masses of gum that exude from the tree at the point of attack. These borers often become so abundant as to entirely girdle large trees, causing their death; and even when not so deadly their attack seriously cripples the tree.

The remedy upon which the most dependence is placed in fighting the Eastern peach tree borer is that of digging out the worms. The conclusion of the very elaborate investigation by the Cornell Experiment Station was that this process must form the essential part of any plan for the control of this insect. In addition to it, the use of tar, tobacco stems, tarred paper or moulding with earth must be resorted to. The first of these was found to be the most effective, but, possibly, dangerous to the tree under some conditions.

In California all of these methods and many others have been used quite extensively, and with more or less satisfactory results; but they all certainly leave much to be desired, since they do not avoid the necessity of also digging out. The digging out process so mutilates the tree, even when the greatest care is exercised, that many growers are of the opinion that more injury is done than when the worms are left alone. When the digging is left to careless help, the tree is often very badly mutilated. Fortunately, the peach root heals over a wound very readily and is

very tenacious of life, often keeping the top alive when there is but a narrow strip of bark left intact.

DIGGING OUT.—The tools used in digging out are a shovel, and a pick, if the ground is hard, together with a hoe or trowel for removing the earth, and a chisel, gouge, knife or home-made tool for cutting out the insect. Several forms of these special tools are on the market in San Jose. Some growers prefer a blacksmith's hoofknife instead of the form of gouge characteristic of these tools.

The time of the digging out is almost always made a matter of convenience, and the facts we have so far learned in regard to the life history do not, as yet, prove that better results would follow a different practice. An important feature of the digging out method is that it is extremely difficult to find all, or even the larger worms, in a tree; and, if the worms are small, their discovery is almost or quite impossible. A single going over of the trees is thus only partially effective, and many orchardists have found that three times during the winter will not exhaust the supply, even though it is quite certain that no moths were flying during the intervals. The rush of other work usually prevents a summer digging out of the worms, though it would seem that just as good or better results might follow from work at that season. We do not have sufficient data to decide accurately the relative value of the supplementary means used in connection with the digging out process.

CARBON BISULPHIDE.—A method that has given exceedingly satisfactory results under favorable conditions is the use of carbon bisulphide. The fact that under other conditions less thorough work was done, and that in some cases it has undoubtedly resulted in the death of the trees, does not signify that it is unavailable for the destruction of this pest. This substance has been used on a commercial scale only in California, though the suggestion was originally made for the Eastern borer by Prof. A. J. Cook, conductor of Farmers' Institutes for southern California, then residing in Michigan. In Slingerland's experiments in New York it proved an entire failure, and was condemned by him as being too expensive, too dangerous to the tree, and entirely ineffectual against the insect. We have no record of the temperature or the condition of the soil in these experiments, and can only conjecture why the results were so unsatisfactory. Certainly, as used in the orchards about San Jose, there is nothing as cheap as this method. When properly handled, the danger to the tree is none; and in effectiveness, when conditions are right, it leaves nothing to be desired.

DANGER TO THE TREE.—Carbon bisulphide has been used for so long a time as an insecticide for the control of phylloxera that we may be very confident as to its uniformity of action and efficiency against insects, and also of the extent of the danger to the plant.

As used against the borer, the danger from this substance is wholly that of the action of the gas, since so little liquid is applied to each tree that it all evaporates before it would be possible for it to penetrate through the bark to the living tissue beneath. Some growers even make it their regular practice to pour the liquid on the bark, and without bad results. If enough material was used, or the soil was very wet so as to prevent evaporation, injury might come from the action of the liquid.

The effect of the gas is dependent upon its density and the length of time it is acting. Even the most delicate growing parts of the plant are tolerant of a weak dose of gas continued almost indefinitely. The point at which injury to root hairs occurs is very little beyond the point where it begins to be effective against insects.

With the more easily killed insects, it might be possible to use the substance for the complete eradication of a subterranean insect, if we could obtain an even distribution of the gas in the soil.

In actual practice it is found that in the case of phylloxera the use of a strength that will be safe to the plant almost always leaves a little colony of these creatures, which are able in a short time to repopulate the vine, and require another treatment. This repetition, every season or two, is very expensive in field work, so that it pays only in unusually valuable vineyards. The chief uses of this chemical have become, therefore: first, the stronger "death treatment," with which both vines and insects are destroyed together; and, second, for disinfecting cuttings or vines removed from the soil. In the latter case they are given a still stronger dose, but for a shorter period, and even though the smaller rootlets may be killed, the plant does not die, because being planted in new soil it can replace any dead parts at once. The bark-covered parts of the plant are many times more resistant to carbon bisulphide vapor than are the growing rootlets and root hairs, and these latter are quite as resistant as most insects.

In treating a peach tree, should there be any root hairs immediately about the crown, they might be killed by the carbon bisulphide at the strength used, but this would not amount to anything to the tree. The danger to the tree would only come from a strength of gas and a length of time of treatment sufficient to injure the most resistant part of the root system.

The amount used in any case should not be suf-

ficient to cause the death even of root hairs very far away from the trunk; and the real danger to the tree is not from too great destruction of root hairs, but from the danger that the gas be retained about the crown in a concentrated condition long enough to cause the death of the more resistant parts of the tree.

The only thing that could cause this retention of the gas about the crown is the presence of water in the soil, which closes up the spaces between the soil particles, through which the gas gradually diffuses itself. The danger is greatest in heavy soils. In very light, sandy or gravelly soil the difficulty would more likely be that the soil might be so dry that the gas would diffuse so rapidly as to fail to kill the insect; in that case, of course, being also harmless to every part of the tree. Practice has shown that there is a wide margin between effectiveness against the insect and danger to the bark of the tree. Intelligently applied, there is no reason why it might not always be entirely safe and effective.

CONDITION OF THE SOIL.—The character and condition of the soil is the most important consideration in the use of carbon bisulphide. The same soil varies most greatly near the surface in the amount of moisture it contains, and, unlike the phylloxera work, it is here in this variable surface soil that this treatment is to be made.

Extreme conditions should certainly be avoided, and uniform results require uniform conditions. The best results have usually been obtained in the orchards where the soil was rather light and in the best condition of tilth. Under these circumstances the method of procedure is the simplest. All that is necessary is to pour the carbon bisulphide upon the ground around the tree close to the tree trunk and immediately mound up the earth a few inches against the base of the tree. In most soils it will be necessary, in order to secure the best results, to remove the soil that immediately surrounds the tree, as this is somewhat hard and packed, and to replace it with loose soil taken from the surface stirred by the cultivator. This is made level and the carbon bisulphide applied as before, and more loose soil used in mounding. If the soil is rather wet or heavy, it will be necessary to remove this soil impregnated with the chemical, so as to give the gas an opportunity to dissipate itself after a day or two, and thus prevent too long an exposure of the root crown to the gas.

Except on the lightest soils, the earth should always be removed if a rain should intervene, as it will effectually seal up the gas and prevent its escape into the air.

In some orchards sufficiently dry soil may not be found for filling the excavations at the time it is desired to make the treatment, in which case chaff or straw may be used instead, covering it well with earth after pouring on the carbon bisulphide. This should, of course, also be removed after a day or two.

In very dry, light soils, if the carbon bisulphide dissipates itself too rapidly to accomplish the desired destruction of the borer, the use of water will make it effective. For this purpose, excavate around the trunk, then wet the soil, put back the earth and sprinkle the top slightly. In a day or two the extra earth may be removed, if it has not dried out enough to permit the escape of the gas.

THE DOSE.—In the matter of the quantity to be applied to a tree, there is a great deal of difference in the practice of different orchardists. Economy would favor as small a dose as will be sufficient; but, if too small, nothing will be accomplished by the treatment; so orchardists generally feel that it is better to give too much than too little. It will not be possible to recommend a dose that will do for all conditions. Probably a larger number try to make their average dose about one ounce than any other amount; and this may be taken as a tentative dose to experiment with. Each orchardist must determine for himself that which will be best under his conditions. The most important factor in this matter is the degree of looseness of the soil. The heavy, compact, moist soils require the smallest dose; and the lighter, looser and drier soils a larger quantity of the carbon bisulphide.

The common practice is to vary the dose according to the size of the tree, putting often several times as much around a large tree as a small one. Some little variation of this kind should occur, but not as much as is the practice. In an orchard with fairly uniform trees the best practice would be to make the dose uniform, without regard to the small variation in the size of the tree. A little change in the character of the soil in different parts of the orchard is a very much more significant matter.

The method of applying carbon bisulphide usually adopted is the use of a common machine oil can. This has the advantage of convenience, but makes it difficult to apply a uniform dose. The deposition of sulphur in the spout decreases the rate of flow, and often gives trouble and makes the judging of the size of the amount discharged very difficult. We have planned a can by which a uniform dose can be rapidly measured and applied. It consists of an ordinary kerosene can, or a machine oiler could be used instead. A bottle with a doubly perforated cork and discharge tube is attached to the spout. The can is

reversed until the bottle measure is filled, when, by righting it, the liquid will pour out of the discharge tube. A bottle of any required size, fitted with perforated cork, can be had at any drug store.

SUMMER TREATMENT.—So far the use of the carbon bisulphide, like the digging out process, has been almost wholly confined to the winter season. This has been chiefly because this season is least busy, and partly because of the fear that there would be more danger to the tree if the chemical were applied when the tree was not dormant.

The danger to the tree at this season is not at all greater than when the tree is dormant, when the treatment is made in the manner employed for this insect. The drier average condition of the soil, which favors the rapid diffusion of the gas, may cause some trouble, on account of the difficulty of keeping the dose strong long enough to kill the insect.

Quite as much, or more, of the injury to the trees is done by the worms during the summer than during the winter, and it would seem desirable to make one or more applications to prevent this summer injury. As so many of the worms are small in summer, digging out would be very difficult to do in a thorough manner; but carbon bisulphide finds no more difficulty in discovering a small worm than a large one, and the injury is stopped before it is hardly begun.

If but a single application is to be made, the best time to do it is early in the winter, after all the eggs are hatched and no more moths are flying. The earlier worms will have already done considerable injury by this time, which might be prevented by a midsummer treatment. Whether more treatments than these two will be profitable in most seasons it is not possible now to say, but careful observation of the condition of the trees in an orchard ought to enable any grower to come to satisfactory conclusions on this subject.

HORTICULTURE.

Strawberry Culture in Arizona.

By PROF. A. J. McCLATCHIE in Timely Hints of the Arizona Experiment Station.

The culture of strawberries has been attended with many difficulties in Arizona during the past three years. The hot, dry summers, with a scant supply of irrigating water, have been very difficult ones through which to carry young plants the first season after setting. It is hoped, however, that by improved methods of culture and by a better knowledge of varieties, strawberry culture may again be as profitable as it formerly was, especially if the hoped-for moister seasons return.

THE SOIL AND ITS PREPARATION.—While strawberries will grow in a great variety of soils, they prefer a sandy loam. It is especially important in this region that the soil be not of such a nature that it will bake when dry. Some varieties do better in the heavier soils of the valley, while others prefer those that are quite sandy.

In preparing the soil, the first step of importance is to carefully level the area to be devoted to strawberries. Work spent in leveling before the plants are set will cause the saving of much labor and an increase of returns that few who have not had experience can realize. The piece selected should have a gentle slope, or should be so leveled as to slope slightly in one direction only, if possible. In preparing the land for setting the plants, two different methods are pursued by different growers. Some make large furrows with intervening ridges, and by connecting alternate ends of the furrows, make endless ditches. This method is best adapted to a hillside, or to a plot on a steep grade. On land that is level, or nearly so, it is better to make comparatively shallow open furrows extending in the direction the piece is to be irrigated. For irrigating the plants most successfully, the rows should be 12 to 20 rods long.

VARIETIES.—But few varieties of strawberries have been grown extensively in southern Arizona. The two most commonly cultivated are the Arizona Everbearing and Michel's Early. The Everbearing succeeds best on heavy soil, while the Michel succeeds best on more sandy soil. The Michel is an early berry, producing the majority of its crop before June. It also endures more heat and drought than the Everbearing, and will often withstand trying conditions that will destroy the latter. At the Experiment Station during the past year about thirty other varieties have been tested. Few of them have proven satisfactory. Some of them were injured by the cold of winter, and the majority of them succumbed to the heat and drought of the past summer. One gives promise of being useful in the valley—the Excelsior. Like the Michel it is an early berry, but the fruit is of better quality than the Michel, has a better color and is larger. The plants do not endure heat and drought quite as well as the Michel, but equally as well as the Everbearing.

TIME OF SETTING.—Strawberries are set in southern Arizona during two seasons, either during the early part of November or during February. Some seasons they do best set in the fall; other seasons they do best if set during the winter. If the winter

following the fall setting be a trying one, the plants are apt to be injured before they get well established. It is usually safe to set plants during February, although they will not get as good a start before the warm weather of summer as the fall set plants will if the winter is favorable.

METHOD OF SETTING.—Judging by our experience at the Experiment Station farm, strawberries do best set on either margin of furrows made in the manner mentioned above. Previous to setting, water should be run through the furrows, and when the soil is sufficiently dry, the plants should be set about 18 inches apart a short distance above the water line. If the furrows are 4 to 6 inches deep and about 15 inches wide on top, and are made 3 feet apart, the plants when set 18 inches apart in the row will be nearly equally distant in all directions. For setting them we have found a common garden spade to be a very useful tool. Holes are made by pressing the spade into the soil, the plants are placed in one side of the opening thus made, and the soil pressed about them by stamping with the foot. Immediately after setting the plants, water should be run through the furrows to settle the soil about the plants, and leave them in moist soil.

IRRIGATION AND CULTIVATION.—Subsequent to setting, the plants need to be irrigated sufficiently frequently to prevent them withering, and keep them growing and in a fresh condition. The frequency of irrigation will depend upon the season of the year and nature of the weather. During the cooler, moister part of the year, irrigation of young plants once in eight to twelve days will be sufficient. During the warmer and drier parts of the year they need to be irrigated twice as frequently. Mulching the young plants with fine straw about the middle of June will aid very much in keeping them in good condition during the summer. The straw will check the flow of water through the furrows, cause it to be absorbed by the soil, and will retain the moisture for many days after irrigation. It will also lessen the effect of alkali that might otherwise accumulate on the surface of the soil about the plants in sufficient quantities to injure them. In most cases it is best to keep the strawberry patch free from weeds, as the latter not only remove plant food but moisture from the soil. In some cases where weeds produce much shade, without encroaching too closely on the plants, they may furnish some protection from the intense heat of the sun. But as a rule strawberries should be cultivated throughout the summer.

Until the young plants are well established, all blossoms that appear should be promptly removed; and they will endure heat and drought better, if all the runners are kept off them during at least the early part of the summer. Young plants struggling to keep alive during trying weather cannot at the same time produce fruit or runners without endangering their lives. After the first season the plants will need less attention, and may be permitted to fruit and to produce runners freely.

Coal Tar and Rosin for Gum Disease of the Orange.

TO THE EDITOR:—I wish to ask some questions through the PACIFIC RURAL PRESS, and also what information you can give in regard to the cure of gum disease in orange trees, but I think it is best for me to write to you and ask you to make out an inquiry about what I want to know, as you are more able to make it out so it will be more interesting to the public.

I think that gum disease in or on the trunks of orange trees can be cured by most anything that will stop the sap or gum from oozing out, but my experience is that coal tar mixed with rosin is the best and cheapest—the rosin melted together with the coal tar makes a more solid covering and the gum or sap cannot penetrate. But a new bark and new wood will be formed under this covering, and then the old diseased bark will drop off. At this time I think it is best to put on a new coat of coal tar-rosin mixture, as the gum disease is most certain to break out anew in a year or so. But I think the gum disease will totally disappear if the tree is properly covered with anything that prevents the gum from oozing out. I put on some of the coal tar-rosin mixture last spring. The old bark is dropping off now, leaving a new, healthy bark, but some of the trees show a sign that the gum will start to ooze out again, so I intend to put on another covering as soon as I can get a little better information about how to do the work so as not to injure the trees. I have put on the coal tar-rosin mixture hot—very hot—with a brush on the affected spots on the trunks of trees, but not all around or all over the trunk. Do you think it will do any damage to the tree if the whole trunk is covered all around with a hot mixture of this?

I have seen people using gas tar on trees, and it killed some and injured all, but not so with coal tar well burned or boiled first and then mixed with so much rosin so as to get thick or hard as grafting wax when cold. I have also used some beeswax, but don't think it is necessary.

I wish to know if anyone has used a mixture of coal tar and rosin and put it on hot and found it to have done any damage to trees? Can it be put on all around the trunk and also on the roots if neces-

sary? My opinion is that it is good to put on all kinds of trees for gum disease or cuts and bruises. It will cause a wound to heal up quicker than common grafting wax and will last longer, too.

But what time in the year should be best for applying this mixture? I have a few hundred trees here which are partly cured that I will use this mixture on, and there are fifty acres or more of thirty-year-old seedlings on the Baldwin ranch that I will direct the same work on.

I will promise to let your readers know what success we have in our work.

I send you a box to-day with some bark that is dropping off those trees I treated with the mixture last spring. It looks to me as if the new bark on some of the trees is perfectly healthy and I feel sure that gum disease can be done away with. But the application must be kept up until the trees have grown a new layer of healthy wood and bark as well over the place where the gum has been oozing out.

A. J. DRATHZEN.

Highland, San Bernardino county.

No one should attempt to answer such questions without experimental data to draw upon. We can only refer the matter to readers who have actually used the specific materials mentioned and noted the results. It is a fact that coal tar is less injurious to tree bark than was formerly thought possible and it has been freely used in connection with the crown borer of the peach tree, but pine tar, so far as we know, retains its old reputation for bark killing. Any black application by its heat-retaining power promotes sunburn and must be avoided on all parts to which the rays of the sun have direct access.

The efficacy of the compound which our correspondent describes lies chiefly in prevention of air and germs capable of producing fermentation and decay. If the gum comes from some local source of irritation it is a thoroughly rational treatment. If, however, gummosis comes from some cause affecting the general growth of the tree, like root failure, through decay or through drying, then the expectation of a cure through treatment of the diseased spot is irrational, for the treatment should reach the cause of the disease and not the results of it. As there seems to be gumming both from local irritation and functional disarrangement one might expect that Mr. Drathzen's treatment might cure some cases and not cure others.

The formation of new bark under a protecting plaster is to be expected. The prevention of active fermentation of the tissues and of drying out gives the healthy bark cells a chance to renew the natural covering. We hope some one can answer the questions as to the effect of applying coal tar in any form. Meantime Mr. Drathzen's account will suggest experiments to many and through their observation of results some facts of general value may be demonstrated.

THE POULTRY YARD.

Cold in the Head.

TO THE EDITOR:—I have a number of chickens, apparently in good health, whose eyes seem affected with what may be a cold. The eye begins to swell, gets somewhat puffy and then closes up altogether. This ailment has just begun and I am giving inhaling of sulphur fumes, head wash of coal oil, and sulphur internally. The chickens have good houses, plenty of water, and are well looked after in general. Can you give me any remedy for the above?—READER, Penryn.

TO THE EDITOR:—The above is an old story, oft repeated. Evidently these fowls have caught cold and have the distemper, which will develop into roup if not checked in time. Fowls at this season of the year are subject to colds, especially if they are kept in close houses. To steer clear of this trouble one must needs see that his fowls have an abundance of pure air, by day and by night, all drafts absolutely avoided. But when the fowls contract colds they should be taken in hand at once. For running at the nose—generally the first indication of colds—the writer never has found anything that excels equal parts of kerosene oil, turpentine and sweet oil, in which dissolve a liberal amount of gum camphor, a drop or two of carbolic acid added. Force this mixture in the nostrils of the fowls that need treatment with a very small oil can. A few treatments will generally effect a cure.

There are washes for swelled head, but if the disease has gone so far a cure cannot always be made. Some poultry keepers have successfully used vinegar and salt for a wash. Mustang liniment is very good. Another wash for cold in the head, or roup, is sulphate of zinc 30 grains, carbolic acid 10 grains, water 4 ounces. A very successful poultryman—a physician—says: "A good all round remedy, available for many varieties of colds and so-called roup, is the

following: Take tincture of aconite 10 drops, tincture bryonia 10 drops, tincture spongia 10 drops, alcohol enough to make one fluid ounce; mix. Of this, a teaspoonful should be given in each quart of drinking water. At the same time fowls having a discharge from eyes or nostrils should have the eyes, nostrils and throat washed out twice daily with a solution composed of 1 part peroxide of hydrogen, 1 part listerine and 4 parts water."

Napa. A. WARREN ROBINSON.

Agricultural Review.

BUTTE.

RAILROAD TO PLUMAS.—Register: Articles of incorporation have been filed for a railroad to be built from Oroville as far as the junction of Spanish and Indian creeks in Plumas county. The survey has been made, right of way lands bought, and the road will be called the Butte & Plumas. It is supposed to be part of an overland road by Beckwith pass.

SURVEYING FOR A DITCH.—Gridley Herald: D. C. McCallum, O. W. Jasper and T. V. Fleming have been engaged during the past week in continuing the survey for the irrigating canal west of Gridley to the Sutter county line. The ditch is to be 60 feet wide on the bottom, carry 8 feet of water and be complete by next fall.

COLUSA.

COLUSA PRUNES.—Sun: The Johnson-Locke Mercantile Co. of San Francisco has purchased the prunes of the Colusa Cured Fruit Association. The association agreed to furnish six cars of smaller sizes, 70s to 80s. After the prunes were graded here it was found that most of the prunes averaged 50s, making it necessary for the association to buy four cars of smaller sizes elsewhere. The recent rain caused a loss of about fifteen tons.

FRESNO.

THE STRIKE'S EFFECTS.—Daily Democrat: Within four weeks after the end of the strike the packing house employees will have regained all that they lost during the maintenance of the strike. The losses, generously figured, amounted to \$17,700. The gains from increase of wages will be \$4762 per week. The packing houses have been able to get more help at the increased wages. Nearly all are working to the limit of their capacity, and many of them are working night shifts.

CENTERVILLE ORANGES.—Selma Enterprise: The country around King river (old Centerville), some 15 miles northeast of Selma, is fast becoming a great orange belt. There are many fine orange groves just coming into bearing in that vicinity, besides a large acreage of young trees. Earlier varieties have already turned a golden color. A number of growers have formed the Kings River Fruit Association. The Earl Fruit Co. will pack at Sanger.

PARLIER'S PROSPERITY.—Four packing houses and a big co-operative winery are running full capacity, with a skimming station for the dairy farmers. The total shipment of raisins will be about 3000 tons.

TURKEYS SCARCE.—Sanger Herald: Local dealers in poultry are of the opinion that there will not be one-third as many turkeys to market this fall as usual, owing to a scarcity of feed.

POTATO YIELDS.—Farmers in the river bottom are now busily engaged in digging potatoes and husking corn. From 50 to 100 sacks of potatoes are being gathered from a single acre of land, and a majority the farmers are holding for \$1 per sack.

KINGS.

THE HOG AS KING.—Hanford Sentinel: The Kings county hog raiser laughs at fate and goeth often to the bank. He goeth from the bank, not as a borrower who diggeth up interest with his finger-nails, for his pigs diggeth it themselves. A sample of this truth comes from G. H. Ross, who has been farming on the Mrs. A. O. Orr ranch north of Hanford. Mr. Ross has worked that ranch of 474 acres for two years and has released the place for a term of five years. Speaking of the hog business, Mr. Ross says there is money in it. He raises the Poland-China breed, and a few days ago he brought in 100 head which brought him \$1178.48. Yesterday he brought in ninety-five more, only two of which were over six months old, and the hand weighed 16,040 pounds and brought \$986.76 in gold coin. Mr. Ross has been running the Andy Ayers fruit ranch also, but has surrendered that.

A FARM WASTE.—N. M. Rafailovich of Hanford, this year, as usual, is putting up California figs in fancy style for the trade. He says one farmer near Hanford raised at least \$300 worth of this fruit this sea-

son; hut, instead of taking care of it, he sold it to a neighbor for \$10 for hog feed. Mr. Rafailovich has to import figs from Fresno and Tulare counties.

BEET SUGAR REPORTS.—Journal: A. F. Nunes reports that sugar beets sowed on his farm a few miles south of Armona did not do well. They started all right and grew thriftily for a while, but finally dried up and died, although they were well irrigated. He says he thinks the beets were given too much water. On the same land he raised fine sweet potatoes. He had one of these potatoes in town yesterday and it weighed about eight pounds. The land used was good land, with plenty of water. W. F. Heisel, who planted sugar beet seed on rich land near this city, reports a failure, also, of the beets.

LAKE.

HORSES FOR MEXICO.—Lake County Examiner: Al Howell has started for the Sacramento valley with 200 head of horses, purchased here by Ed Stewart of San Francisco for shipment to the City of Mexico. Mr. Stewart was assisted in the purchase by Manuel Alvarez, a horse expert of Mexico.

IDAHO SEEDLESS PEARS.—Middletown Independent: Mr. Henning Lundquist brought to this office last Saturday two pears, called the Idaho Seedless, weighing two and two-third pounds, from his St. Helena creek ranch.

MADERA.

AN IRRIGATION SYSTEM.—Mercury: Efforts are now making to secure subscriptions to create a reservoir system for irrigation. The plan is to build a large reservoir covering 6000 acres of land on the Adobe ranch, in which the water will be conserved until it is needed. It will then be run into the canals and ditches of the Madera Canal & Irrigation Company and distributed to those holding water rights. It is estimated that the reservoir company and the canal company will together be able to irrigate 30,000 acres of land. The system is to cost \$100,000, and the work on the reservoirs will begin as soon as the subscribers are obtained. There will be many improvements made to the Madera Canal & Irrigation Company's system. The main canal will be cemented from the Adobe ranch to the dam house, at which place a big dam will be constructed across the Fresno river, to gather the seepage and save the waste waters until they are wanted. The water rights will cost \$5 per acre, which may be paid in yearly installments. Farmers who already have water rights under the Madera Canal Irrigation Company will also be required to pay for water rights in the Adobe and Archibald reservoir system.

MENDOCINO.

FISH PLANTING.—Ukiah Press: The local fish hatchery planted 50,000 young trout in the river above Calpella last Sunday. This is the last lot of the season's hatching. The hatchery will remain closed until next April. Other varieties of fish have recently been planted in ponds about Selma and in waters of other parts of the San Joaquin valley.

MONTEREY.

IRRIGATION COMPANY.—Salinas Index: The Fort Romie Water Company has been incorporated, to take water from the Salinas river near the confluence of the Arroyo Seco creek for the Fort Romie colony and lands adjacent thereto. The principal place of business is to be Soledad; existence twenty years; and the amount of capital stock is \$6750, divided into 450 shares of the par value of \$15 each, all subscribed, the Salvation Army being the heaviest stockholder, taking 247 shares in the enterprise.

ORANGE.

SANTA ANA CELERY.—The first carload of white plume celery this season was shipped October 22 from Smeltzer to Chicago. Regular shipments will begin in heavy volume about November 1st. The acreage is 1813 acres, and the yield is estimated between 1100 and 1200 carloads. This output will go mainly to the Middle West and Atlantic markets.

SACRAMENTO.

NEW FRUIT CO.—Record-Union: J. H. Cunningham, W. R. Gore, J. J. Housen, A. T. Dodge and H. A. Buffum are directors of the Fair Oaks Fruit Co., recently incorporated for \$25,000 capital stock, of which \$1000 has been subscribed. This company takes the place of the old fruit association. Improvements are being made on the packing house and machinery.

SAN JOAQUIN.

DAM IMPROVEMENTS.—Lodi Sentinel: Extensive improvements are to be made on the Woodbridge dam and irrigation ditches this winter and ditch scraped

larger. The dam will be re-inforced by new piles.

DIVERTING CANAL.—Independent: Frank D. Ryan, Commissioner of Public Works, and M. A. Nurse, engineer to the auditing committee to the Commissioner of Public Works, are inquiring into the status of the proposed diverting canal east of this city and what is desired.

SETTLERS COMING.—In the past ten days fifteen tickets used by the colonists and deposited with the local agents have not been called for, and as the tickets have run out the parties who left them at the Santa Fe office have undoubtedly either purchased property here or intend to locate in this vicinity.

SANTA CRUZ.

WAR ON PESTS.—Pajaronian: At a meeting of the Orchardists' Association recently it was decided to petition the agricultural department of the University of California to send an expert to this valley to spend a few months in studying the local pest question.

APPLE CROP AND MARKET.—Newtowns are quoted here above \$1 per box. The early season outlook of low prices did not last long. C. O. Silliman is handling his apple crop on his own account this year. The apple shipments from Watsonville during the past week amounted to sixty-nine carloads. The season's shipments to Oct. 30 total 521 carloads. It is estimated that 150 to 200 carloads will cover all the merchantable apple stock left in the valley. It is a short crop year. A. Block & Co. of Santa Clara have been heavy purchasers of Newtowns during the past two weeks for export. Their pack has a gilt edge reputation everywhere.

SHASTA.

SHASTA'S PRUNE CROP.—Anderson Valley News: There are 1500 tons of dried prunes in Shasta county this year, mostly raised in the vicinity of Anderson, and will be shipped from here. The J. F. Bedford Co. and Porter Bros. have each purchased several hundred tons, and are packing. Several carloads will go to Hamburg, Germany, in boxes. The sales which have been made will average about \$55 per ton, a total of over \$80,000.

SONOMA.

THEY WILL FIGHT.—Tribune: A San Francisco attorney has offered to defend the suit and pay all expenses for one-third of the amount recovered in the matter of Healdsburg prune growers against the C. C. F. Association at San Jose.

PASSED IN THE NIGHT.—On Friday thousands of wild geese passed over this section, southward bound, and until late in the night their discordant notes were heard.

WET GRAPES.—Index-Tribune: About one-half the grape crop at Sonoma City was unpicked when the rain came.

WILL BUILD A SHIP BASIN.—The Golden Eagle Milling Co. of Petaluma have purchased a portion of the Black-horn peninsula at Petaluma and will build a big ship basin.

BIG HOP CROP.—T. Boone Miller, off his 60-acre hop yard on Russian river, obtained 707 hales.

STANISLAUS.

SCANDINAVIAN COLONISTS.—Modesto Herald: Within the last few weeks some seventy or eighty members of families who will make the Scandinavian (Himlar) colony, near Turlock, their future home have arrived, and a large number are expected this week, coming in a body. A number of buildings have been erected by the colonists and many are under way.

MORE SUBDIVISION.—The F. F. Harwick tract of 1600 acres, near Keyes' switch, has been sold for \$44,000 to two bankers, and is to be divided into small tracts for home seekers on easy terms.

AND MORE IRRIGATION.—It is reported that Mr. Schmidt of Tracy and his partner in the recent purchase of the Cowell ranch of 2000 acres, near Grayson, contemplate the installation of a crude oil plant on the river to irrigate a large area of the land.

SUTTER.

LEVEE WORK.—Farmer: The directors of Levee District No. 1 are rushing the work on the tule levee as rapidly as possible. With the repair of some of the private levees on the higher ground most of the land will escape overflow from any ordinary flood, though the district levee be not completed until next fall.—Cranmore Correspondence: The work on the weir will be completed in a few more days.—Appeal: M. A. Nurse, engineer of the State Board of Public Works; P. H. McGrath, assistant secretary of the State Board of Examiners; ex-Bank Commissioner John Markley, with Scott F. Ennis and E. S. Brown, of the firm of Ennis & Brown of Sacramento, visited the Tisdale

break in Sutter county on Sunday to accept the \$6000 work on the Tisdale break. Messrs. Ennis and Brown wanted to acquaint themselves with the district along the Sacramento where large crops of beans are produced every year. Mr. Nurse was trying to discover means to lessen the flood that flows into the Sutter basin every winter and to reduce the volume of water, which the Colusa Sun intimates is labor lost. There is considerable levee work being done in District 70 and on the Girdner embankment.

DAMAGE TO CROPS.—Correspondence Sutter Independent: It is estimated that \$100,000 worth of beans, corn and spuds will be lost in No. 70 and the tule lands adjoining unless we get two or three weeks of the most favorable weather.

TEHAMA.

MORE USE FOR OIL.—Red Bluff News: The steamboats of the Sacramento Transportation Co. are to be changed from wood burners to oil burners, and already the steamers Dover and Varuna have been so changed. The big barge Red Bluff is ready to float again.

TULARE.

ALFALFA SEED CROP.—Advance: J. N. Birkhead got sixteen tons of seed from seventy acres, which can be marketed at 8 cents per pound, and means \$2560, or a return of a little over \$36 per acre for a part of a season's crop.

SOME FRUIT MOVEMENTS.—Exeter Sun: The first car of lemons was shipped October 31. Orange picking will commence in a number of orchards on the 10th of November. The crop is estimated about the same as last year, the fruit being of a better shipping size. The picking of Emperor table grapes commenced Wednesday and a car was reported out November 2.

THE SQUIRRELS HELPED HIM.—Tulare Register: At the Drummond place, between Tulare and Visalia, the squirrels made sad inroads upon the prunes the early part of the season and Mr. Drummond thought for awhile that they would take the crop. Where the ravages of the squirrels were the worst the prune crop was the best and the most profitable, because the largest.

YOLO.

THE INDEPENDENT MILL.—Mail: The Woodland Milling Co. has contracted to sell all its surplus flour to a San Francisco firm, which was the highest bidder. Enough flour is reserved for the local demand.

A BUILDING MOVEMENT.—Enterprise: A healthy building movement is on in Davisville and nearby farms. It has been many years since so much building and renovating has taken place in this vicinity. R. B. Armstrong, George Carey, G. W. Pierce, Mrs. Pena, James Campbell, Eli Snider, Charles Dodge, J. C. Montgomery, George Sanders and Arthur Ongh are building—most of them barns.

CAUGHT IN RAIN.—Winters Express: In the downpour Ben Griffin had sixty tons of prunes on the trays and trees and Oscar Guthrie had several tons of prunes in sweat boxes.

YUBA.

BARRIER NO. 1.—Marysville Appeal: The San Francisco Bridge Co. will undertake to finish its part of Barrier No. 1 within six weeks from now. It will be constructed of sheet piling, hrush and rock.

NEW BRIDGE.—Work is progressing on the new bridge across the North Fork of Yuba river opposite Hansen's ranch, and is being built by Robert Forhes.

RAILROAD FROM THE HILLS.—The survey is finished for the railway from Grass Valley via Lincoln and down Levee No. 6 to Vernon. There is a difference of opinion as to whether the motive power will be electricity or steam.

A BIG EAGLE.—Marysville Appeal: Jason Jones, of Linda township, shot and killed a gray eagle, the spread of whose wings is 7 feet 4 inches and talons 2½ inches.

Horse Owners! Use

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The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blisters from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or bluish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

Crossing the Bar.

Sunset and evening star,
And one clear call for me!
And may there be no moaning of the bar,
When I put out to sea.

But such a tide as moving seems asleep,
Too full for sound and foam,
When that which drew from out the boundless deep
Turns again toward home.

Twilight and evening bell,
And after that the dark!
And may there be no sadness of farewell,
When I embark;

For tho' from out our bourne of Time and Place
The flood may bear me far,
I hope to see my Pilot face to face
When I have crossed the bar.

Beside the Pond.

Here where the waters gleam
In the light of the afternoon,
And the flickering shadows seem
To time with the wild bird's tune,
There is restful hush and a sweet surcease
From care, and the heart is filled with peace.

Hark! how the bell birds sing!
See how the midges dance!
The echoing bird notes ring and ring
Until it seems, perchance,
A fairy hidden within the wood
Is calling aloud to the solitude.

Sing, heart, as the wild birds sing!
Dance, heart, to the midges' play!
Be glad as some sportive woodland thing
To live in the light of day,
While the old pond ripples a mystic rune
Through the glow of the waning afternoon.

—Mary Clarke Huntington.

Oft in the Stilly Night.

Oft in the stilly night,
Ere slumber's chain has bound me,
Fond Memory brings the light
Of other days around me:
The smiles, the tears,
Of boyhood years,
The words of love then spoken;
The eyes that shone,
Now dimmed and gone,
The cheerful hearts now broken.
Thus in the stilly night,
Ere slumber's chain has bound me,
Sad Memory brings the light
Of other days around me.

When I remember all
The friends so linked together
I've seen around me fall,
Like leaves in wintry weather,
I feel like one
Who treads alone
Some banquet hall deserted,
Whose lights are fled,
Whose garlands dead,
And all but he departed.
Thus in the stilly night,
Ere slumber's chain has bound me,
Sad Memory brings the light
Of other days around me.

—Thomas Moore.

Deborah Whipple's Rights.

"Will you just read that over again, Squire Andrews? It don't seem a mite like Jonathan Whipple to make such a will as that. I can't quite sense it"—and Deborah Whipple bent toward the old lawyer with a look of bewilderment on her face.

Jason Andrews cleared his throat and read once more the last will and testament of Jonathan Whipple:

"Unto my dear wife, Deborah Whipple, during the term of her natural life, she remaining my widow, I give and bequeath the use of one-half of my dwelling house, with the use of one-half of the barn, two acres of tillage land behind the barn, the fruit of one-half of the orchard in the upper side of the highway and about the dwelling house and barn. And my will is that immediately after my decease, Silence Adams, the woman who would have been my wife forty years ago, had I not broken my pledged word, that Silence Adams do enjoy the other half of my house and land, with all rights and privileges thereto arising. And it is my mind and will that my wife Deborah, from time to time, and at all

times, as she shall have occasion, shall have liberty of free and uninterrupted recourse through the kitchen to the north door, down the path to and from house and barn. Also, she shall have my mare and one cow, and all my fowls."

The lawyer paused, and Deborah rose quickly to her feet.

"I ain't a gettin' my rights, Squire Andrews," said she, as she moved toward the door. "An' who'd ever dreamed that Jonathan had had Silence Adams on his conscience for forty years an' more?"

The door opened and closed, and the widow of Jonathan Whipple walked swiftly down the village street.

On the outskirts of the village, in a tiny cottage house, dwelt Silence Adams, spinster. She was a frail little woman, with soft, brown eyes and gentle ways. For many years she had supported herself with her needle, though at times barely keeping the wolf from the door. As she sat with bowed head and swiftly flying needle, a loud knock on the door quickly startled her, and she sprang to her feet, as Deborah Whipple walked unceremoniously into the room.

"Good afternoon, Mrs. Whipple. How do you do?" said Silence, placing a chair for Deborah.

With a curious look in the woman's face, Deborah dropped into the offered seat.

"So Jonathan Whipple promised to marry you, and then broke his word," said she, abruptly.

"I never breathed it to a human soul!" answered Silence, growing scarlet and then pale, as she lifted two startled eyes to Deborah's face.

"Well, Jonathan Whipple has advertised it to the whole town, now, a try-in' to make it up to you, after he's dead an' gone. I suppose Squire Andrews has told you about the will?" answered Deborah, somewhat bitterly.

"Yes, Mrs. Whipple, he has," said Silence, quietly, "but I don't want Jonathan Whipple's money, an' I won't take it."

"Taint the money I care about, Silence, it's the idee of dividin' up the house an' land in that queer fashion, an' two women a-tryin' to run the same farm. It's just like a man to plan out such foolishness," said Deborah, hotly.

"But I shan't come," said Silence, firmly. "I am very comfortable here."

Deborah glanced around the shabby little room, while a mental picture of her own pleasant surroundings rose up in swift contrast.

"I don't suppose you care about folks knowin' it any more than I do," said Deborah, after a little. "An' if you an' I come to some sort of settlement about the will, they don't need to, as I can see."

"There's no settlement to make, Mrs. Whipple," answered Silence, quietly. "It's too old a story to bring up now, and I—I forgave Jonathan long years ago."

Deborah rose with a sudden movement of impatience, and her face flushed resentfully.

"Well, as long as you are satisfied to let things remain as they be, I'm of the same mind," said she, shortly. "Though I'm sure I'm willing to carry out my husband's last wishes," added she, piously.

Left alone, Silence Adams leaned wearily back in her chair, with a long sigh. A look of retrospection filled the brown eyes, and her thoughts dwelt with the silent past. Presently she rose, and, going to an old-fashioned desk in one corner, she took from it a bundle of letters, yellow with age. One by one she opened and read each faded epistle, all of which closed with the same words:

From your devoted lover,
JONATHAN WHIPPLE.

A thin hand of gold and a faded daguerreotype of a hoyish face with honest eyes and a merry smile, completed the momentos of that long-hurried past, a past that, though buried beneath the wreck of many years, still lived, a sad, sweet memory, in the heart of Silence Adams. Tenderly and carefully she replaced the package in the old desk,

whispering softly as she did so, "Ah! Jonathan, there are wrongs that even money cannot right."

Time sped on its way, and Deborah Whipple still dwelt alone in the substantial farmhouse her husband had built, managing the farm with skill and economy. She was a robust, energetic, strong-willed woman, and though the thought of Jonathan's will rankled bitterly, she put it from her mind with fierce determination.

"I ain't a goin' to give up my rights for no woman!" she often muttered to herself, "let alone dividin' up the house in that ridiculous fashion."

In the village burying-ground she had placed a handsome stone to mark the last resting place of Jonathan Whipple, and with dutiful regularity she visited and cared for the sacred spot.

In the third year after Jonathan Whipple's death there swept through the little village an epidemic that found a victim in nearly every household. Doctors were overworked and nurses were scarce, till many women unused to caring for the sick were pressed into service. As is often the case, the naturally robust people were among the first victims, while the more fragile escaped.

Thus it came about that Deborah Whipple was among the first to succumb to the disease. By some strange fatality, it fell to the lot of Silence Adams to be called upon to care for the sick woman, it being impossible to find other help. With a timid shrinking in her heart, Silence crossed, for the first time, the threshold of Jonathan Whipple's house. Deborah was a very sick woman, and for many days her mind had wandered amid the feverish fancies of a disordered brain. As her restless eyes met the gentle glance of Silence Adams bent upon her, a strange look of relief swept over her face.

"So you've come at last, have you?" she said, sharply, lifting herself upon her elbow. "Well, Jonathan has been a comin' to me every night sence I was sick, and tellin' me to send for you, an' now you've come maybe I can get a wink of sleep." And, strange to say, she did fall asleep almost immediately. The fever turned, and she began to slowly recover from that time.

One day as she lay weak and white and wasted on her bed of convalescence, with Silence sitting near her, she took the other's hand in hers. There were tears in her eyes and a tremor in her voice.

"Silence Adams," said she, "for nearly forty years I was a true, faithful wife to Jonathan Whipple, an' he was good an' kind to me an' lovin' as most men are to their wives. An' how do you suppose I felt when I found that will and knew that in his mind for all those forty years another had filled the place I supposed I had occupied? I aint as soft natured as some folks, but I've got my feelin's, an' taint very pleasant to learn you've been 'a life-long mistake,'" added she, bitterly.

Silence bent and took the woman's hands in a tender clasp.

"Forgive me, Deborah, if I have wronged you in my thoughts. What is past cannot be recalled. Let us try to forget the bitter, and remember only the sweet in our life's experience," said she, softly. "And, now, Deborah, as you are so much better, I think I will leave you to-day," added she.

But the hands of the sick woman clung to those gentle fingers.

"Don't go, Silence! Can't you make up your mind to stay for good? We are both all alone in the world, an' both a growin' old. Maybe Jonathan knew what was best for us, after all," she said, earnestly.

For a moment Silence did not speak. "Yes, Deborah, if you wish me to," answered she, at last.—Conkey's Home Journal.

It was at a fashionable boarding-house and they had calves' brains for lunch. She spoke to the gentleman next to her: "And do you like calves' brains, Mr. Domo?" "I always try to feel content with what I have, madam."

Dawn and Sunset.

At dawn
A modest trill is heard,
A signal from some unseen bird,
Some trusty harbinger of morn;
Then from the tiny, swelling throats
A hallelujah of rich notes
In greeting to the day just born.

At sunset,
When the rosy light
Is fleeing from approaching night,
And woodland shades are growing deep
A chirp, a flutter here and there,
A beat of wings upon the air,
And night has hushed the birds to sleep.

—Frank H. Sweet.

Simplicity in the Home.

Our whole future very often depends on how we start. It is not, of course, expected that a young married couple will start exactly right. That would not be possible. Experience teaches us as nothing else can. But there are one or two points easy of comprehension that are possible to take into married life at the very beginning; and one of them is the great gospel of simplicity. The simpler we keep our lives the happier we are. If she but keep this one idea in mind, two-thirds of her future troubles will be avoided. It fits into everything she puts into her life, and whatever she puts into her home—that one little word, simple. Small as that word is, it is one of the most difficult to understand and grasp. But to learn its fullest meaning is to bring to one's self the greatest happiness possible. It solves more problems than any other single element in our living of to-day, when it is so easy to drift into complications.

We become nervous, petulant, ill; we make burdens of our homes instead of rest-places of delight; we make of ourselves unattractive wives and irritable husbands simply by permitting too many things to come into our lives under the impression that they are necessary to our living and happiness. We place a value on externals far beyond their value, until they assume a fancied necessary place in our lives. But, as a fact, we would be infinitely better off without them. And by our failure to perceive that they are unnecessary, we simply complicate our whole order of living, and push happiness farther away from us. Every unnecessary thing we do takes away just so much of our time and strength from the necessary thing, which, if we did, would add to our strength, and make our lives of surer benefit to others. Sooner or later our American women must awake to this gospel of simplicity.

A young wife starting out in her housekeeping to-day with a determination to keep it and her home simple, and thereby enable her to make her own life fuller and richer, need not fear that she will incur criticism. She is simply putting herself in line with a strong modern tendency. The senseless incumbrance of our homes and our lives with things that matter not, that push out the real and the vital, has caused enough damage to the freshness of our woman, and stood long enough in the way of their finest and fullest development. A realization of this truth has come. The simple home and the simple life have taken on a new meaning, and with them will come a new womanhood. The thing that is worth while is the study of the hour.

And that is what every wife, young or old, should stand for; the real, the simple, the natural, thing worth while. That means that brightness of spirit that keeps us ever young no matter how the calendar may count our years. That is what cements love, strengthens congenial companionship between husband and wife, and keeps alive that beautiful consideration in the heart of a man for the companion of his life that is the finest and highest feeling that a man can treasure for a woman—not the consideration that a stronger vessel feels for a weaker one; but the consideration that elevates with each day; refines a man; that commands the highest respect of himself, and brings out the best that is in him.—Edward Bok, in Ladies' Home Journal.

A Young Man's Room.

While the large issues in the problem of keeping the boys on the farm are constantly being threshed out, I am inclined to think that many of the smaller issues, side issues if you please, are overlooked. And yet these little things in the aggregate constitute "home life" and it is the "home life" which will hold the boy if anything will.

One of these little matters is the boy's room. I think very few parents realize how a room of his own, a den, appeals to a young man. Certain it is that in the majority of farm houses the young man's room is merely a place to sleep in. There is nothing in it or about it to lure him there when the day's work is done. Very likely he is not himself aware of the delightful possibilities of the little bedroom. But once he has had a den he will take a constant and increasing pleasure in it. Outside attractions will lose much of their force and influence.

The fitting up of such a den is largely a matter of individual taste and ingenuity. All men like a place to throw themselves down. The white spread or clean blankets of a bed are prohibitory. Substitute for the bed a spring cot having a mattress. Put this against the wall and make up the bed. Over the whole throw a covering of some pretty inexpensive material which shall reach nearly to the floor on the front and ends. On this throw half a dozen sofa pillows (the young man's feminine friends are likely to supply some of these once they know he is fixing up a den) and he will have a lounge upon which he can throw himself at will. Most attractive window seats or cozy corner seats can be built of old boxes or odd bits of lumber and upholstered with the filling from old mattresses, the covering being of the same material as used on the lounge. A painted floor with rugs, even if they be put pieces of rag carpet, is usually preferred to a carpeted floor, and is easier to take care of. For the walls a plain solid color is best, for against this photographs and pictures will show to best advantage. Hooks should be provided for guns, fishing rods and other implements pertaining to his sports. Let him arrange his photographs to suit himself. Provide book shelves where good authors will always be within reach. For the rest let the young man suit himself. He will be quick to see the artistic possibilities of bird nests, the deserted paper domiciles of hornets, the red berried sprays of bitter sweet, and the like. And remember always that his den is his sanctum, a retreat wherein no one has right without his consent.—B. W. Thornton.

A Child's Literary Blank Book.

The child who has seen nothing but the best reading until 12 years of age, will have formed a taste which will refuse to be satisfied with trashy literature ever after.

A blank book can be commenced at the very first. It should not be too small, and must have a stout, stiff cover. In it should be placed the name of the author of the book the little one has been interested in, a short, concise sketch of his life, a picture cut from any of the magazines, and perhaps a picture of his birthplace and home; then the book or books read, a space being left after the notes on each author for other books; or, the blank pages being numbered, a reference to the number of page containing author's name and sketch on each of the later read books.

I always read a book twice, once right through, every word. In not less than a month later I reread it, and then select the thought which seems to me most worthy of remembrance in the whole books. For instance, when I read *Vanity Fair* the first time the scene which seemed to stand out in my mind was where Becky Sharp, who was then on the continent after her husband had left her, met two men whom she had entertained as her husband's friends. They nodded familiarly with-

out the customary lifting of the hat, when poor Becky in her bitterness of spirit said, "He wouldn't have dared do that had he been here." But the second time, the beauty and pathos of the following appealed to me: Speaking of the wars on the continent preceding the battle of Waterloo, Thackeray says, "And every shot fired in those wars wounded some gentle heart far away."

Both thoughts with their dates should be given, and then a short sketch or review of the whole book could be written (from memory). All this should be written on exercise paper and then, when the whole is satisfactory in regard to spelling, language and punctuation, copied into the blank book.—Mary Taylor Ross.

Give the Girls a Chance.

On my daily tramps I pass through an old playground, a beautiful, shady, flowery old place. There the boys have a rollicking good time. In an open space at one end the older boys play baseball before an excited and perspiring audience, whose chief ambition is to become some day a member of "the team." Under the trees games of marbles, leapfrog, foot races and other games are in progress.

Very seldom have I seen a little girl at play there. One afternoon I met two little maidens gathering violets in a shady place. While I stood watching them a boy came running up with a baseball bat in his hand.

"Susie," he shouted, "mamma says for you to come home right away and tend to the baby!"

"Yes, an Annabel Burns, you're goin' to catch it when you get home—your ma's been calling you for an hour!" added a boy who followed the first.

"Oh, she wants me to wash the dishes. Come on, Susie!" and the two little girls ran away.

There is the whole secret in a nutshell. Why are so many of our young women flat-chested, sallow, and all "nerves?" When a young girl is sent to high school or when she enters an office or a store to earn her living, and after a year or two we find her broken down in health, we are apt to charge it to hard work or too much study, but it is undoubtedly because she has no reserve force of strength and energy. Very few young men break down with nervous prostration. They have during childhood built healthy bodies and strong nerves because of their free and unrestricted life. While they played baseball and raced in the open air, their little sisters were at home tending the baby, washing dishes, learning to sew.

Mothers, is this fair play? Why not let the boys take a turn at the girls' work? It will not hurt them to know how to wash dishes. It will make them gentler to take care of the baby for an hour or two. It may perhaps some day be of much value to them to be able to sew buttons on their clothes. Let the girls do the boys' work once in a while. It will make their backs strong to chop kindling wood and carry water. It will give them fresh air to go on errands.

If the outdoor work and the indoor work were more fairly divided, we should have stronger and better developed girls and gentler and more unselfish boys, and it will not take away from the womanliness of the one nor from the manliness of the other.

Parents, be fair with your children. Give them equal rights. Send your girls out to run and play as well as your boys. Divide up the work that keeps them indoors. Do not encase their bodies in stiff corsets and do not lengthen their skirts and make young ladies of them at 12 and 13. Begin now to make the woman of the future—healthy and vigorous. Give the girls a chance!

"And yet," said the man who was always trying to prove old sayings, "I can't think of a single invariable instance in which 'troubles never come singly.'" "You can't, eh?" retorted the practical fellow. "Did you ever see any single twins?"

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ELGIN, ILLINOIS.

DOMESTIC ECONOMY.

Hints to Housekeepers.

To make apple butter, slice the apples as for pies, and put them in a crock, using three cupfuls sugar to two gallons apples. Put a plate over the crock and place in an oven. Cook three hours.

Never soak salt fish with the skin down, as the salt will fall upon it and remain there, while if the skin is placed uppermost the salt falls to the bottom of the dish, as it does when salt is placed in a basin of water.

Waldorf-Astoria salad is made by cutting celery and apples into small pieces and mixing together with a few English walnut meats. Pour into a dish lined with lettuce, and pour over it a mayonnaise dressing.

Why do we eat? To build up wasted tissue, to keep bright the fire of life, to cleanse the system, and, as a consequence, to maintain a clear mind and a heart full of joy. Surely, the work of the true cook is profound.

Put sugar in the water used for basting meats of all kinds. It gives a good flavoring to veal more especially. Vegetables are also improved in flavor if a little sugar is added while boiling, especially green peas, beans, squash, turnips and corn.

To disinfect clothing and towels from cholera or fever patients, throw them into a tub of water, in which has been dissolved one ounce of permanganate of potash to every three gallons of water. Boil the clothes as soon as removed from the solution.

There is a growing tendency among cooks who think for themselves to use cucumbers in chicken, capon and fish salads. In almost every case they are eminently satisfactory so used. Lettuce or celery or radishes may be used, too, in cases where a meat is used.

Preserved shredded pineapple, peaches cut in dice and preserved cherries with the pits removed make a toothsome combination for a fruit ice. Make a custard of one quart of cream, the yolk of six eggs and one and one-half cupful of sugar. When it is cold turn the custard into a freezer and turn the dasher until it is about half frozen. Then add the fruit and pack. Let it stand two or three hours.

To make pistachio ice cream pound and blanch one-quarter pound each of pistachio nuts and almonds and pound them together in a little water until they are thoroughly crushed. Make a custard of one quart of rich cream, three-quarters of a pound of sugar, the yolks of eight eggs and one teaspoonful of vanilla. Remove it from the fire, add the nuts, and when it is cold press the mixture through a sieve, and freeze.

Strong and vigorous people may bathe early in the morning on an empty stomach. The young and delicate should bathe three hours after a meal. The best time is two or three hours after breakfast. Persons subject to attacks of giddiness and faintness, and those who have palpitation and other sense of discomfort at the

heart, should consult their physician before bathing. After being in the water, a considerable friction ought always to be used, enough to bring the blood to the surface of the body. If any chill is felt, take immediately a warm sling, glass of wine, or two or three grains of quinine.

About Jellies.

To make good jelly, the fruit should be used before it is too ripe. To extract the juice well, it should be brought to a scald, put in a stone jar, mashed, and jar and contents stood in a kettle of boiling water, thoroughly scalded and strained through a coarse cloth. To make the jelly clear, the mash should not be squeezed. Jelly should not stop boiling until it is done. Jelly will turn out best if the strainer is a three-cornered flannel bag, and if the compound is allowed to slowly drip through the flannel strainer just before putting in the glasses. The mold should be dipped in hot water for a second. Never use a brass kettle in making jelly. Mold on jelly may be prevented by thickly covering it with finely powdered sugar. Melted paraffine wax makes the best covering, and may be used over and over again. Cover the glasses with papers dipped in beaten egg. Below will be found a few timely recipes for jelly, given on the best authority.

Apple: Cut and core tart apples; add water to nearly cover, and boil until pulp. Strain, press lightly, and add three-fourths pound of granulated sugar to a pound of juice. Boil until it will jelly on a flat plate, and strain into glasses. Cover as directed above. Some flavor with lemon juice or essence.

Quince: Polish the quinces smooth with a cloth, cut in small pieces, and pack in a kettle, pour in cold water to cover, boil until soft. Hang up in a three-cornered flannel bag to drain, pressing occasionally to make the juice run more freely. Keep in a warm place. To one pint of juice add one pint of sugar, and boil fifteen minutes. Pour into tumblers or bowls, and seal as above.

Boiled Cider: To each pint of boiled cider add one pound of sugar, and boil ten minutes.

Tomato: Peel the tomatoes and squeeze through a cloth; weigh and add pound for pound of white sugar. Boil to a jelly and seal. Flavor with lemon juice if desired. Keep in a cool, dry place. This is an excellent article.

Ripe Grape: Stem, wash, put in a porcelain kettle; to every eight pounds of fruit add one cupful cold water. Boil until quite soft, and strain through a bag described above. Boil again half an hour, and add granulated sugar pound for pound. Some add one tablespoonful of cinnamon to a quart of juice.

Green Grape: Prepare and scald as for ripe grape jelly. Use grapes that have turned slightly. Wash while cooking to extract the juice. Strain, weigh, and then boil fifteen minutes. Meantime heat an equal amount of granulated sugar. Stir, turn in glasses, and cover.

S. F. Market Report.

Produce Market.

SAN FRANCISCO, Nov. 5, 1902

The following tables represent speculative opinion in the principal markets for grain in the country and State during the week:

CHICAGO WHEAT FUTURES.

	Nov.	Dec.	May.
Op. Cl. Opened. Closed. Opened. Closed.			
Wednesday	73 3/4 @ 72 3/4	75 @ 74 3/4	
Thursday	72 3/4 @ 72 3/4	74 1/4 @ 74 1/4	
Friday	72 3/4 @ 72 3/4	74 1/4 @ 74 1/4	
Saturday	72 3/4 @ 72 3/4	74 1/4 @ 74 1/4	
Monday	70 3/4 @ 70 3/4	71 1/4 @ 71 1/4	73 @ 73 3/4
Tuesday			

CHICAGO CORN FUTURES.

	Nov.	Dec.	May.
Op. Cl. Opened. Closed. Opened. Closed.			
Wednesday	51 @ 50 3/4	43 3/4 @ 43	
Thursday	50 @ 50 3/4		
Friday	50 3/4 @ 51 1/4	43 3/4 @ 42 3/4	
Saturday	51 1/4 @ 51 1/4	42 3/4 @ 42	
Monday	53 3/4 @ 52 3/4	50 3/4 @ 50 3/4	41 3/4 @ 4 1/4
Tuesday			

SAN FRANCISCO WHEAT FUTURES

	Dec.	May.
Op. Cl. Opened. Closed. Opened. Closed.		
Wednesday	\$1 34 @ 1 33 3/4	\$1 35 1/4 @ 1 35
Thursday	1 22 @ 1 31 3/4	1 33 3/4 @ 1 32 3/4
Friday	1 31 3/4 @ 1 34 1/4	1 32 3/4 @ 1 36
Saturday	1 34 1/4 @ 1 33	1 35 1/4 @ 1 34 1/4
Monday	1 31 3/4 @ 1 31	1 32 3/4 @ 1 34 1/4
Tuesday		

BARLEY FUTURES.

	Dec.	May.
Op. Cl. Opened. Closed. Opened. Closed.		
Wednesday	\$1 22 @ 1 21 1/4	
Thursday	1 20 @ 1 19 1/4	\$1 21 @ 1 21 1/4
Friday	No sales.	No sales.
Saturday	1 21 @ 1 21	1 23 3/4 @ 1 23 3/4
Monday		

CLEARANCES.

Clearances of grain from this port during the month of October were 454,847 cents wheat, 400,981 cents barley, 100,320 barrels flour (exclusive of Government shipments to Manila), 4480 cents rye, 1446 cents oats and 2240 cents corn. In October, 1901, clearances were 875,897 cents wheat, 838,921 cents barley, 142,132 barrels flour (including 11,000 barrels by the Government to Manila), 17,954 cents rye, 14,583 cents oats and 4 cents corn.

Total clearances of grain for the season to date have been: 1,892,861 cents wheat, against 1,809,511 cents for the same period last year; 2,193,671 cents barley, against 2,195,768; 410,906 barrels flour, against 479,906. Total shipments of wheat and flour reduced to wheat for the season have been 150,115 tons, against 155,262 tons during the same period last season.

WHEAT.

California has special conditions as to yield, situation among the dealers, and charters, this year. They may temporarily justify dealers in scurrying around for grain at specially high prices, and producers who have grain to sell in holding on for awhile; but our personal advices from other great grain regions in the United States outside of California and the statistics of this year's production that are appearing in print in the greater grain markets do not justify the idea that prices will go very much higher this year, though they may not be low at any time; and whatever height of prices is maintained seems likely to be more the result of conditions among traders than the statistics of production. Up to date the crop of wheat in the United States, this year, seems to have been about 13,400,000 bushels in excess of the usual yearly rate of increase. The northwestern corner of the United States (east of the Rocky mountains) and the southwestern part of Canada contiguous are setting up at a rapid rate, and wheat appears to be the most easily raised and principal crop. The crop in the Dakotas, and especially North Dakota, this year, was unusually good, and there is a possibility of the shipping of grain from there to Washington and Oregon where the crop was short, as in California. There is a good demand for wheat from the Minneapolis mills. On the other hand the demand from Europe is not good.

Country advices to the PACIFIC RURAL PRESS on wheat and barley from those well qualified to describe the situation are as follows: "Our predictions, made public through the PACIFIC RURAL PRESS in June last of a rising price for grain, especially barley, proved true, but probably few farmers got the benefit, as the crop was practically all sold in July. There was a perfect stampede to sell. Farmers seemed consumed with a fear that the market was about to drop, though most growers were familiar with the condition of affairs in the warehouses.

"Of this year's crop of wheat and barley not over 2% remains in the hands of the grower. In the principal grain grow-

ing section of the State the Big Four, but principally Eppinger and Balfour, Guthrie & Co., have bought most of the crop, though Horst Bros. bought considerable and no doubt will be heard from more largely next year.

"Comparatively little wheat has been shipped from the Sacramento valley to date, although considerable barley has gone for export, perhaps 10% of the crop. More is being shipped now, but a scarcity of cars makes shipping slow. California mills take a comparatively small amount of wheat and barley. The whole fact of the matter is at present that somebody, besides the farmers, owns the grain. Whether the big dealers have sold short or not remains to be seen. If they have any large portion of this year's crop on hand they will have considerable grain to back them up. The crop this year was not a large one, but it was as large as we may expect to get from now on."

Wheat raisers about Stockton are quoted by dealers there as having 30% of their crop still in their possession. There has been considerable increase of mercantile knowledge among farmers in that vicinity in the past two years, which may account for a position on their part in the grain market which seems to be unlike that in any other part of the State.

Wheat is already moving from Oregon to San Francisco, over 10,000 tons having already been contracted to come. Northern ports still continue to hold the African trade.

Futures in this market continue to remain higher than those in Chicago, instead of lower, as is usual.

The cash market has remained at \$1 35 for shipping and \$1 37 1/4 @ 1.40 for milling throughout the week, though with a slightly weaker feeling evident on Monday, especially on shipping wheat, on prices for which buyers and sellers failed to get together. The market this morning was:

California Milling	1 37 1/4 @ 1 40
Cal. No. 1 shipping, alongside	@ 1 35
Off qualities wheat	1 31 1/4 @ 1 32 1/4

PRICES OF FUTURES.

Wednesday, at the forenoon session of the Merchants' Exchange, December, 1902, wheat sold at \$1 31 1/4 @ 1.31; May, 1903, \$1 32 @ 1.32 1/4.

FLOUR.

A further admitted advance of 15c in dealers' prices on Saturday last has not caused change in quotations at this point.

BARLEY.

Country advices, of interest to farmers, from those in position to be well posted on trade conditions, though looking at them from a producers' standpoint, are: "It is not likely that the yield of barley will be heavy, and there is no reason why farmers should not get \$20 a ton for their barley next year. There will be no surplus." Speculative prices continue weak, and market inactive, attention of dealers being concentrated on wheat, but cash market conditions are good. A lot of sixty-three sacks Chevalier sold at auction for \$1 47 1/2 on Friday last, October 31. During the week one cargo cleared for London, and a considerable was shipped for Melbourne, Australia. On November 1 San Francisco, Port Costa and Stockton stocks in call-board warehouses aggregated 48,733 tons, against 63,549 tons October 1. Receipts during October were 27,240 tons.

Feed, No. 1 to choice	1 18 @ 1 21 1/4
Feed, fair to good	1 15 @ 1 20
Brewing and shipping	1 22 1/4 @ 1 26
Chevalier, No. 1 to choice	1 50 @ 1 60
Chevalier, common to fair	1 30 @ 1 45

OATS.

Offerings were moderate during the week. Stocks in bay warehouses November 1st 9459 tons, against 8695 tons October 1st. Receipts in October, 4916 tons; consumption, 5670 tons. A government order for 1500 tons was being filled last week.

White Oats, fancy feed	1 25 @ 1 35
White, good to choice	1 22 1/4 @ 1 25
Gray, common to choice	1 17 1/4 @ 1 25
Milling	1 22 1/4 @ 1 27 1/4
Surprise, good to choice	1 25 @ 1 32 1/4
Black, for feed	1 10 @ 1 20
Black, for seed	1 27 1/4 @ 1 35
Red, common to choice	1 12 1/4 @ 1 24 1/4
Red, fancy	1 25 @ 1 30

CORN.

Stocks in hand November 1 amounted to 980 tons—200 tons net decrease during October. New stock is coming in; good quality, but damp. There is a large amount of Egyptian corn in District 70 on the Sacramento river. William Shaft and James Baxter of Fullerton recently sold sixty tons of popcorn to a Los Angeles company at 2 1/2 cents a pound, but the output in Orange county is small.

Dealers are not pushing sales and advent of new crop does not seem to affect trade.

Large White, good to choice	1 45 @ 1 50
Large Yellow	1 40 @ 1 50

Small Yellow	1 40 @ 1 50
Egyptian, Brown	1 05 @ 1 15
Egyptian, White	1 20 @ 1 30

RYE.

A few sacks were sold during the week at the quotation given.

Good to choice	1 08 1/4 @ 1 10
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BUCKWHEAT.

Good to choice	@ 1 75
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BEANS.

The crop of beans about Stockton will be large, and was not hurt by the rain. Local paying prices to producers at that point some days ago were: Pinks, \$2.50 @ 2.75; Black-eyes, \$3.90 @ 4.00; Small Whites, \$3.00 @ 3.50; Lady Washingtons, \$2.90 @ 3.05; Limas, \$4.50 @ 4.75. Considerable shipment is being made of stocks secured before the regular fall rise in prices. The crop at Santa Barbara, mostly Small Whites, is expected to be 140,000 sacks—60,000 short of last year. Up to \$3.10 was paid ten days ago. A hot wind caused some loss—500 sacks in one case. Ventura Limas are going 80 pounds to the sack. Buyers are plentiful and taking all the stock they can get. First sales brought \$3 50 per sack. The failure of the Small White bean crop in Michigan, which is the principal competitor of California growers for Middle West and farther east markets, is ascribed as the cause of the present rather high price of beans in this market, but the price of that line of beans here at present is not high, as shown below. Michigan dealers are reported buying here. Dealers in this market will maintain a depressing attitude toward quotations until the size and character of the crop of this year is further determined and they have secured a stock at prices here which will enable them to market it at a fair profit.

Red Kidney and Garavanza are reported scarce in some quarters.

The following are the PACIFIC RURAL PRESS quotations of bean prices November 1-3 for three years:

	1902.	1901.	1900.
Pea	\$3 75	\$3 50	\$4 00
Small White	3 50	3 25	4 00
Lady Washington	3 30	2 50	3 00
Pinks	2 85	2 20	2 30
Bayos	3 10	2 40	2 75
Reds	2 75	3 25	3 00
Red Kidney	4 50	3 50	...
Limas	4 40	4 65	5 30
Blackeye	4 50	3 25	3 25

Since November 1-3 of this year there have been attempts in some quarters in this market to lower quotations on Bayos, Pinks, Reds and Whites and raise them on Red Kidneys, Limas and Black-eyes. Some publications at this point have changed wholesale selling quotations accordingly, and some have not. Those which have quote as follows:

Pea, fair to good, 100 lbs.	8 30 @ 3 40
Small White, good to choice	3 15 @ 3 25
Lady Washington	3 30 @ 3 30
Pinks	2 60 @ 2 70
Bayos, good to choice	2 75 @ 2 85
Reds	2 65 @ 2 75
Red Kidney	4 75 @ 5 00
Limas, good to choice	4 30 @ 4 45
Black-eye Beans	4 10 @ 4 20
Garbanzos, large	2 25 @ 2 50
Garbanzos, small	@ 2 50

PEAS.

Prices to producers on choice round and car lots on wharf, city:

Green Peas, California	1 25 @ 1 50
Niles Peas	1 65 @ 1 75

HOPS.

The consumption estimated for the coming year is 200,000 bales, with 216,000 bales supply. It is believed—English 311,000 cwt., German 20,000 bales (subject to importation), New York 25,000, Oregon 85,000, Washington 30,000 and California 56,000 bales. Northern markets are at a range of 24 1/2 @ 25 1/2. In the Sacramento valley district the highest price reported is 24 1/2, but holders are firm for more, and Sonomas are bringing 26c. It is, however, understood that less than 3000 out of 13,000 bales first grade in Sacramento district are now in the hands of producers. Eight carloads were shipped from Yolo to New York October 30, where quotations are 33 @ 35c. German prices have been advanced.

California, good to choice new... 22 @ 26

HAY AND STRAW.

Hay has gone up another 50c. The idea that there is not as much hay in the State as dealers at first calculated seems to be the cause. Lack of cars interrupts the movement.

The total receipts of hay on the San Francisco market for the week ending yesterday were:

	Cars.	Boats.
Wednesday	16	5
Thursday	19	4
Friday	24	1
Saturday	13	1
Monday	26	1
Tuesday	11	3

A total of 2000 tons. Such light receipts, say some dealers, have helped to strengthen the market, and it is doubtful if there would be much larger receipts if cars were plentiful. There is always the danger, however, of holding too long for prices not based on cost of production. Somers & Co., in their weekly letter, say: "Choice Wheat hay, from which as a standard, most other grades are regulated, is at least 50c per ton higher, \$14.50 per ton now being the top quotation, although parts of especially fancy cars have brought as high as \$15. The general feeling of strength is helped somewhat by the continued activity with grain, barley holding quite firm, with oats selling at a slight advance over last week's figures. The account of stock just being taken is not yet ready for publication, but the semi-official returns show a total of about 100,000 tons, as reported last week. Hay seems to be distributed about as it was last year, with a marked scarcity along the Sacramento river and an increase throughout Napa and Sonoma counties. The great hay centers—Livermore valley and the Hollister district—are short on last year's stock, with Santa Clara county showing very light receipts also. On the whole, we think that with an average shipping demand and a continuance of the present activity in town trade, hay will sell for at least \$2 per ton higher before the season is over." We give present prices as follows:

Choice Wheat Hay	14 00 @ 14 50
Good Wheat Hay	12 50 @ 13 50
Other grades same	10 00 @ 12 00
Wheat and Oat	10 00 @ 13 00
Tame Oat	10 00 @ 12 50
Second Quality Oat	7 50 @ 9 50
Barley and Oat	7 50 @ 10 00
Alfalfa	9 00 @ 10 50
Straw, 3/4 bale	40 @ 57 1/2

MILLSTUFFS.

Brans, 1/2 ton	21 50 @ 22 50
Middlings	@ 26 50
Shorts, California	22 00 @ 23 00
Barley, Rolled	@ 25 50
Cornmeal	@ 31 50
Cracked Corn	@ 32 00

HONEY AND BEESWAX.

Some wholesalers quote selling prices as below; others, at fully 1c higher on most items. The latter say the market is firm and bare. Strictly fancy beeswax, of which there is extremely little, will bring producers 30c per pound, we are assured.

Extracted, White Liquid	5 1/4 @ 6
Extracted, Light Amber	5 1/4 @ 5 1/2
Extracted, Amber	4 1/4 @ 4 1/2
Extracted, Dark Amber	3 1/4 @ 4
White Comb, 1 lb frames	12 @ 12 1/2
Light Amber	10 @ 10 1/2
Dark Comb	5 @ 8
Beeswax, Good to choice, light, 1 lb	27 @ 29
Dark	25 @ 26

LIVE STOCK AND MEATS.

Acorn-fed hogs are not due to arrive yet and are not being quoted, and dealers do not like to take country dressed.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, 1 lb	6 1/4 @ 7
Beef, cows	5 @ 6
Veal, large, 1 lb	7 @ 8
Veal, small, 1 lb	8 @ 9
Mutton—ewes, 7 @ 7 1/4; wethers	7 @ 8 1/4
Lamb, spring, 1 lb	9 @ 9 1/4
Hogs, hard grain fed, 150 to 250 lbs	6 1/2 @ 6 1/4
Hogs, small, fat	6 @ 6 1/4
Hogs, large, hard, over 250 lbs	6 1/4 @ 6 1/2
Hogs, soft or acorn fed	@ 6 1/2
Hogs, country dressed	7 1/4 @ 8

Dealers are quoting prices to producers for live stock as follows, less 50% shrinkage on cattle:

Cattle—Steers	8 1/2 @ 9
Cows and Heifers	7 @ 7 1/4
Thin Cows	4 @ 5
Calves (gross weight)	4 @ 5 1/4
Sheep—Ewes (gross weight)	3 1/4 @ 3 1/2
Wethers	3 1/4 @ 3 1/2
Lambs—Suckling, 1/2 head, 82 1/2 @ 2 75; 1 lb (live weight)	4 @ 4 1/4

POULTRY.

Five cars of Eastern, the birds of which are larger and plumper than Californian and sell for more, catching the best of the trade, have arrived and been put on the market from Saturday to Wednesday of this week, which makes the movement for Californian rather slow and weak, with fair receipts. Quotations for the PACIFIC RURAL PRESS of Wednesday morning's sales, by commission men, showed:

Turkeys, alive, choice young	17 @ 19
Turkeys, alive, Hens, 1 lb	16 @ 17
Turkeys, alive, Gobblers, 1 lb	16 @ 17
Hens, California, 1/2 dozen	5 00 @ 6 00
Roosters, old	5 00 @ 5 50
Roosters, young (full-grown)	5 00 @ 6 00
Fryers	4 50 @ 5 00
Broilers, large	4 00 @ 4 50
Broilers, small to medium	3 50 @ 4 00
Ducks, old, 1/2 dozen	3 50 @ 3 50
Ducks, young, 1/2 dozen	2 50 @ 3 50
Geese, 1/2 pair	1 50 @ 1 75
Goslings, 1/2 pair	1 75 @ 2 00
Pigeons, old, 1/2 dozen	1 25 @ 1 50
Pigeons, young	1 75 @ 2 25

CHEESE.

Wholesalers and commission men,

Wednesday morning, were quoting sales to the trade at:

California, fancy flat, new.....	14	@15
California, good to choice.....	13	@13½
California, "Young Americas".....	15	@15½

BUTTER.

Creamery, extras, #1.....	28	@29
Creamery, firsts.....	26	@27
Dairy, select.....	25	@26
Dairy, firsts.....	24	@25
Dairy seconds.....	21	@23
Firkin, good to choice.....	22	@23½
Mixed store.....	18	@20
Pickled Roll.....	22	@24

EGGS.

California, select, large, white and fresh.	37	@42
California, select, irregular color & size.	30	@35
California, good to choice store.....	25	@30

WOOL.

The auction sales in northern California of fall clip closed with that at Cloverdale October 28. The prices realized were not all that the more sanguine among producers had expected. The report that most of the falls at Ukiah went for 13½c to 14c, some as low as 12c, is confirmed here; but there seems to be considerable local reticence about the sale and prices. Local reports of the Cloverdale sale are that there were 120,000 pounds of wool on hand (of which 15,000 pounds remained unsold on sale day), selling at from 11½c to 13½c, which, it is locally claimed, is 1½c better than last year. Reduction of price from sellers' views was claimed by buyers on the ground of unusual seediness this year; but such claim is not made in the city. The claim is made at Cloverdale of better average prices there than at Ukiah. This market is considered to be cleaned up on spring clip, and as most of the fall clip bought at recent sales was for Eastern account, the market is not very lively on any line.

SPRING.

Humboldt and Mendocino.....	16	@18
Siskiyou.....	14	@15
Red Bluff.....	15	@16
Middle Counties.....	10	@12
Southern, 7 mos.....	9	@11
Southern Coast.....	7	@9
Southern San Joaquin.....	7	@9
Foothill.....	10	@13
Oregon Valley.....	15	@16
Eastern Oregon, light.....	10	@12½
Eastern Oregon, fair to good.....	10	@12½
Sonoma.....	15	@16
Nevada, as to condition.....	12	@14

FALL.

Humboldt and Mendocino.....	12	@13
Northern, free.....	10	@12
San Joaquin.....	8	@11
Lambs.....	8	@10

SEEDS.

Good crops here and comparative failure in some other important sections is causing some seed to appreciate, alfalfa particularly. Dealers would not be surprised to see it reach \$15. Mustard seed is not in demand. The California crop in seeds is said to be good. One firm of seedsmen, growing for wholesale trade in California, will increase their acreage for next year 200 acres.

Alfalfa, Cal.....	10	50@11 00
Flax.....	—	—
Mustard, Yellow.....	—	—
Mustard, Trieste.....	—	—
Canary.....	—	—
Rape.....	—	3½
Hemp.....	—	4

BAGS AND BAGGING.

Calcutta Grain Bags, buyer June-July.....	5½@5¾
Calcutta Grain Bags, spot.....	5¼@6
San Francisco Grain Bags, 22x36, spot.....	5¼@5¾
San Quentin Bags, #100.....	5 55@—
Wool Sacks, 4 lbs.....	34 @35
Wool Sacks, 3½ lbs.....	31 @32
Fleece Twine.....	7¼@8
Gunnies.....	13 @14
Bean Bags.....	4¾@5
Fruit Sacks, cotton, three sizes.....	6, 6¼, 7
Fruit Sacks, Jute.....	6 @7½

HIDES, PELTS AND TALLOW.

Only select hides, clean and trimmed, can be relied on to bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower quotations.

	Sound.	Culls.
Heavy Steers, over 56 lbs.....	11 @—	9 @—
Medium Steers, 48 to 56 lbs.....	10 @—	8½@—
Light Steers, under 48 lbs.....	8½@—	7½@—
Heavy Cow Hides, over 50 lbs.....	9 @—	8 @—
Light Cow Hides, under 50 lbs.....	8½@—	7½@—
Stags.....	7 @—	6 @—
Wet Salted Kip.....	8½@—	7½@—
Wet Salted Veal.....	9½@—	8½@—
Wet Salted Calf.....	10 @—	9 @—
Dry Hides.....	16 @17	15 @—
Dry Kip and Veal, 11 to 16 lbs.....	13 @—	11 @—
Dry Calf, under 4 lbs.....	18 @—	16 @—
Salted Horse Hides, large.....	2 75	@3 00
Salted Horse Hides, medium.....	2 25	@2 50
Salted Horse Hides, small.....	1 50	@2 00
Dry Horse Hides, large.....	1 75	@—
Dry Horse Hides, medium.....	1 50	@—
Dry Horse Hides, small.....	1 25	@—
Dry Colts' Hides.....	50	@—
Pelts, long wool, #1 skin.....	80	@1 20
Pelts, medium, #1 skin.....	65	@75
Pelts, short wool, #1 skin.....	40	@60
Pelts, shearling, #1 skin.....	15	@30
Deer Skins, best summer.....	35	@—

Deer Skins, good medium.....	—	@30
Deer Skins, thin winter.....	—	@20
Elk Hides.....	10	@12
Tallow, good quality.....	5½	@6
Tallow, No. 2.....	4½	@5
Goat Skins, perfect, medium.....	30	@35
Goat Skins, small.....	—	@20
Kid Skins.....	5	@10

POTATOES.

Practically the entire supply of Merced sweets has been bought up by a pool of commission merchants in this market, and consumers may expect to see them go to 2c per pound. Stockton prices on river potatoes are reported weak at 35@37½c, but on account of contest between dealers and producer's association quotations are open to question. San Francisco wholesale selling prices to-day are:

Burbanks, Salinas, #1 cental.....	1 00	@1 20
River Burbanks, good to select, #1 cental.....	25	@60
River Reds.....	65	@75
Sweet Potatoes, #1 cental.....	1 20	@1 25

VEGETABLES.

Beans, Lima, #1 lb.....	2¼@	3¼
Beans, String, #1 lb.....	3 @	4
Cabbage, choice garden, #100 lbs.....	50	@60
Cucumbers, #1 large box.....	40	@—
Egg Plant, #1 large box.....	60	@80
Garlic, #1 lb.....	2 @	3
Onions, Yellow Danver, #1 cental.....	50	@75
Okra, Green, #1 box.....	40	@60
Peas, Sweet garden, #1 lb.....	2¼@	4
Peppers, Chile, #1 box.....	40	@75
Peppers, Bell, #1 box.....	50	@75
Pumpkins, Eastern Yellow.....	10 00	@15 00
Squash, Hubbard, #1 ton.....	5 00	@8 00
Squash, Marrowfat, #1 ton.....	8 00	@10 00
Summer Squash, Bay, #1 large box.....	75	@1 00
Tomatoes, #1 large box.....	40	@60

The Fruit Market.

FRESH FRUITS.

The Eastern crop is showing a very light percentage of good apples, owing to fungus diseases, and prices are low in consequence. California apples, this year, are either very good or very poor. There has been a lot of very wormy stock on the market, but it is giving way to very fine stock. Santa Cruz growers are shipping considerable to Kansas. The recent rain storm laid out the berry business at Watsonville, but another good crop of strawberries is expected next month.

Apples, fancy, #4-tier box.....	1 25@	1 50
Apples, good to choice, #50-lb. box.....	75@	1 00
Apples common to fair, #50-lb. box.....	25@	50
Cantaloupes, #1 crate.....	50@	1 00
Cranberries, Cape Cod, #1 barrel.....	8 50@	9 00
Cranberries, Coos Bay, #1 60-lb. box.....	2 25@	2 50
Raspberries, #1 chest.....	5 50@	7 00
Grapes, Cornichon, #1 crate.....	65@	1 50
Grapes, Isabella, #1 crate.....	40@	75
Grapes, Black, #1 crate.....	60@	1 00
Grapes, Muscat, #1 crate.....	40@	65
Grapes, Seedless, #1 crate.....	85@	1 15
Grapes, Tokay, #1 crate.....	60@	75
Nutmeg Melons, #1 box.....	30@	40
Peaches, #1 box.....	40@	75
Pears, Bartlett, #1 40-lb. box.....	1 35@	1 75
Pears, other kinds, #1 box.....	40@	1 00
Persimmons, #1 box or crate.....	50@	1 00
Plums, choice large, #1 box or crate.....	65@	80
Plums, small, #1 box.....	35@	50
Prunes, cold storage, #1 crate.....	75@	1 00
Pomegranates, #1 small box.....	40@	65
Quinces, #1 box.....	35@	60
Strawberries, Longworth, #1 chest.....	9 00@	11 00
Strawberries, Large, #1 chest.....	3 00@	5 00
Watermelons, #1 doz.....	75@	1 50

DRIED FRUITS.

Prune packers and shippers, who have been in much trouble for a couple of years, are making hay while the sun shines. The demoralization of the growers in a trade way having given packers a chance to do business on practically their own terms, they are realizing on it with no unnecessary delay, and the result is perhaps the most rapid and extensive marketing of prunes with the least friction among dealers ever seen in this State. The output is especially large to Europe. A San Francisco house is packing prunes in barrels for France.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	4½@	5½
Apricots, Moorpark.....	7 @10	
Apricots, Royal, good to choice, #1 lb.....	5½@	7
Apricots, Royal, fancy.....	7 @7½	
Figs, 10-lb. box, 1-lb. cartons.....	65 @80	
Nectarines, #1 lb.....	3½@	4½
Peaches, unpeeled, choice.....	4½@	5½
Peaches, unpeeled, fancy.....	5½@	6½
Pears, halves, fancy.....	7 @8	
Pears, halves, choice.....	5½@	6
Pears, halves, fair to good.....	3½@	4½
Plums, Black, pitted.....	4½@	5
Plums, Red and Yellow.....	5 @5½	
Prunes, Silver, good to fancy.....	4½@	6
Prunes, in bags, 4 sizes, 2¼@2½c; 40-50s, 4¼@4½c; 50-60s, 3½@3¾c; 60-70s, 3@3¼c; 70-80s, 2½@2¾c; 80-90s, 2@2¼c; 90-100s, 1½@1¾c.		

COMMON SUN-DRIED.

Apples, sliced.....	4 @—
Apples, quartered.....	4 @—
Figs, White, in bulk.....	5 @ 5½
Figs, Black, in sacks, ½ lb.....	3½@ 4
Plums, unpitted, ½ lb.....	1½@ 2½

RAISINS.

An illustration of how much more successfully business affairs can be conducted along the line of the idea of co-operation

rather than contests, is afforded by the history of the corraling and marketing of this year's immense raisin crop by the C. R. G. Association, which was completed this week by the sale of the remainder of the crop to the packers at the previously prevailing association figures, which give producers a generous return for their investment. The packers will now enjoy the benefit of their friendly co-operation with the Association by advancing prices to a figure which will also give them a generous profit, which they did upon the completion of the sale, raising 2 and 3 loose ¼c each and 3-crown layers 10c over the prices given below.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5½c #1 lb; No. 3 crown do, 5½c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5½c; No. 2 crown London Layers, 20-lb boxes, \$1.40 #1 box; No. 3 crown do, \$1.50; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehasas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

The first new Washington Navel oranges of the season were received in this market last week Friday from J. Parker Whitney of Placer county and sold for \$5 per box, regular sizes; but most of the arrivals are from Butte county and are to-day bringing \$4 to \$4.25. They are well colored, but not very sweet, and do not take particularly well with retailers. Late Valencia are out of the market.

Oranges, Late Valencia, #1 box.....	3 00@	4 00
Lemons—California, select, #1 box.....	1 75@	2 00
California, good to choice.....	1 00@	1 50
California, common to fair.....	—@	—
Limes, Mexican, #1 1000.....	4 00@	4 50

CANNED GOODS.

The asparagus pack for this market this year is estimated at 250,000 cases of twenty-four 2½-pound cans, an increase of 50,000 cases over last year, and the pack of 1903 will probably be even larger. There is a good demand. About one-half is the pack of Robert Hickmott, who is constantly increasing his acreage on Boulder Island.

Canners properly situated are putting up as much tomato goods as possible, expecting excellent prices. Our advice are: "There is a great scarcity of tomatoes here and East. Canners on this coast will probably not fill 75% of their orders, and Eastern ones are similarly situated. The reason is simple. The demand outstrips the supply, as in barley and fruits generally."

The Ontario cannery put up over 1200 tons of fruit this year, all of which were sold before canned. One-fourth of the pack was sold in southern California. Four hundred acres of tomatoes will be planted next year to be used at that plant.

The new San Leandro pickle factory is putting up over 300 cases per day of tomato catsup.

NUTS.

On walnuts this market is full of buyers but no sellers. On account of the short crop in Europe prices are expected to climb steadily. The crop in southern California is both coming in and going out rapidly, and holding well up to weight. Thirty-two thousand pounds from the Sewell farm are reported sold at 10½c to a Los Angeles firm. Almonds, not quite so firm, are closely following walnuts upward, though to follow is a new position for them.

California Almonds, shelled.....	24 @26
California Almonds, paper shell, #1 lb.....	10½@11½
California Almonds, soft shell.....	7½@9
California Almonds, hard shell.....	4½@5½
Peanuts, California, fair to prime.....	4½@5½
Peanuts, Eastern, hand-picked.....	6 @6½
Walnuts, White, soft shell, #1 lb.....	10½@11½
Walnuts, White, standard, #1 lb.....	9½@10

WINE.

This has been one if not the greatest year in the history of the State for large yield of grapes, good prices paid for them, and large make of wine—30,000,000 to 40,000,000 gallons of the two kinds. The only low thing in this line, so far as appears now, has been the percentage of sugar in the grapes.

The annual letter of Mr. Gibbey in Europe says: "Generally speaking, the whole of Europe has the same tale to tell of the vintage of 1902—diminished quantity and double quality. The French vintage is estimated at only 880,000,000 gallons, as compared with 1,364,000,000 in 1901. This has resulted in a considerable rise in the price of ordinary wines at all large centers. In regard to the champagne vintage of 1902 it can only be described as lamentable. Hardly any wine worthy of the name will be produced in the district. Fortunately, however, large stocks of good wines of former years are in the hands of merchants and shippers in this section. According to the official figures there were 114,000,000 bottles there last April. This is exclusive of stocks held elsewhere in France and the rest of the world."

Object Lesson in Citrus Culture.

It is seldom that a trade publication carries so much straightforward instruction as the new catalogue of the San Dimas nurseries, San Dimas, Cal. R. M. Teague has succeeded in telling a practical citrus culture story in text and picture better we believe than it has ever been done before. All contemplating citrus fruit planting should have a copy.

ALMONDS.—Calistogian: D. M. Hanson raised twenty-five tons of almonds on his ranch near Lower Lake.

No Reasonable Man expects to cure a neglected cold in a day. But time and Allen's Lung Balsam will overcome the cold and stave off consumption. Cough will cease and lungs be sound as a new dollar.

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Patrons of Husbandry.

Tulare Grange.

TO THE EDITOR:—The Grange met at its hall on the 1st. The usual enjoyable lunch was had, with its accompaniments of social greetings and conversation.

After reading and approval of the minutes the order of business was called. Under the head of new business the printed programme of exercises for the next six months was distributed.

PROGRAMME FROM NOVEMBER 1, 1902, TO MAY 1, 1903.

November 1—National Grange topic. Question box. Music.

November 15—Carelessness is a greater hindrance to commercial success than laziness. Question box. Music.

December 6—National Grange topic. Election of officers. Question box. Music.

December 20—Initiation in third and fourth degrees. "A youth is more likely to succeed if he chooses his own career without paternal influence." Question box. Music.

January 3—Installation of officers. National Grange subject. Question box. Music.

January 17—The student who makes his own way through college gains more practical benefits than the student who has money to pay his way. Question box. Music.

February 2—National Grange subject. Initiation first and section degrees. Question box. Music.

February 16—That one who makes us laugh is as great a benefactor as one who makes us think. Initiation in third and fourth degrees. Question box. Music.

March 2—National Grange subject. Question box. Music.

March 16—The outlook for the future. "Those that think must govern those that toll." Question box. Music.

April 6—National Grange subject. Question box. Music.

April 20—The study of physical culture in the public school should be required by law. Question box. Music.

BERTHA I. MORRIS,
ELLEN FLEMING.

On motion the Worthy Master appointed a committee of three to report at the next meeting resolutions of regret on the death of Bro. Alpha Messer, late Lecturer, for six years, of the National Grange.

December 4th being the birthday of the Order of Patrons of Husbandry, and December 6th being the regular meeting day of this Grange, it was resolved to celebrate our birthday anniversary on the 6th.

THE STATED SUBJECT.—The National Grange topic for November, "To what extent is the Grange fitting its members to hold public office, and why?" was then called up and discussed. In considering this subject the Lecturer called on nearly every brother and sister present for their views. Leading the consideration of the subject, the Lecturer read from the Grange Quarterly Bulletin for the fourth quarter the thoughtful and suggestive article of the Worthy Lecturer of the National Grange. The purport of the views on the subject of all the members was that a consideration and discussion of topics of Grange and public interest in our Grange gives the members more comprehensive views and a better understanding of the subject under consideration; that such better understanding confirms, alters or modifies the views of all present, and as no subject of a partisan nature is considered in the Grange the consideration of all subjects is strictly impartial, fair and with a view to getting at the merits of it, and as a consequence all discussions are of a very pleasant, social character, and, besides, being instructive, add much to the sociability and enjoyment of our meetings. In this way, and on these lines and to this extent, the Grange does fit its members to hold public office, if called upon to do so. If not called upon to hold public office, it educates them to a better knowledge of public necessities and to be better guides in public affairs.

GRANGE PROGRESS.—A report was read of the number of Granges organized between the 1st of October, 1901, and the 30th of September, 1902, show-

ing a total of 256. Of these California had 5, Maine, New York and Ohio 23 each, Oregon 19, Pennsylvania 16, Washington 10 and Michigan 90. It was determined at the last National Grange meeting to hold the next one at Lansing, Michigan, and as appreciative of this the representatives of the Order from Michigan promised that by the day of meeting—Wednesday, November 12—100 new Granges would be organized. It will be done.

QUESTION BOX.—The question box being opened two questions were found therein: First—To what extent should sisters participate in Grange work? Second—According to their size, are prunes lighter this year than an average?

Replying to the first, the sisters claimed they are entitled to hold any office in the Order, which is more than the brothers are, and that sisters should participate and lead in all work of the Grange; that the social features of the Grange are in their keeping, and their aid in the ceremonies of the Grange add greatly to the impressions they make. Answering the second question, a very full discussion being given to it, it was conceded that prunes this year, for size, do not average in weight with other years. No one present—and all spoke on the subject—claimed to know the cause; but, if not all, nearly all thought it is owing to the lack of the usual amount of sugar in the prunes this year. Neither did any one attempt to account for the lack of usual amount of sugar in prunes, but it was suggested that it might arise from overbearing, or from lateness of ripening or some atmospheric conditions not fully understood by the members. It was also suggested that successive croppings, without the application of fertilization, may have much to do with it.

PRUNE PRICES.—While considering this subject, some of the brothers reverted to the published report of the proceedings of this Grange at its last meeting that sale of prunes at a basic price for the four sizes, 60 to 100, is fair to producer and buyer; that the buyer dictates these terms strictly in his own interest and that a difference of half a cent per pound between the different grades as to weight is too great a margin; that the prunes do not depreciate in value so rapidly and in that way the price paid is not fair to the producer.

What remedy have you for this injustice, if it is unjust? was then asked. The answer was, co-operation. But it was claimed that co-operation has failed, referring to the failure of the California Cured Fruit Association. To this it was replied that the Association failed inasmuch as, perhaps, one-third of the prune growers refused to co-operate; that the two-thirds who, in good faith, did co-operate fixed a price on prunes which was fair to producer and to consumer, agreeing to pool their crops and take their pro rata of pay as sales were made; that this fixing of price and pooling of crops enabled the growers who refused to co-operate to sell their prunes at a lower price and at once dispose of their entire crops, and so demoralized the prune market and ruined the combine. Nevertheless the prices realized by members of the Association on their prune crops for that season's crop were better than are now being paid by the packers, notwithstanding the fact that there was a large hold-over when that year's crop came on the market and that this year the market was bare, with a great loss of prune crop in Europe. The moral of this is that co-operation must be a co-operation of all; that the producer, if he gets a fair value for his product,

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must have a say in fixing the price; that such price must be such a one as will pay the producer for capital invested and labor expended and will induce the largest consumption. Is such a co-operation as that herein contemplated possible? No one was bold enough to deny it. No one was confident enough to say how or when it will be attained. This Grange passes the question around. Incidentally, it was claimed and admitted that, as an article of diet, there is no more palatable and healthful fruit put on the table than a properly cured prune.

The third and fourth degrees were conferred on one candidate.

The subject for next meeting's consideration will be "Carelessness Is a Greater Hindrance to Commercial Success Than Laziness."

"A Word to Lecturers," from the National Grange Quarterly Bulletin, by N. J. Bachelder of Concord, N. H., Lecturer National Grange, was read. All members were interested in the discussion. None left the hall until the Grange closed.

J. T.

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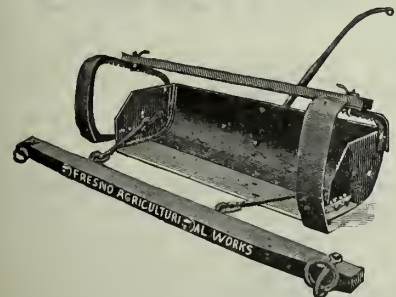
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FORESTRY.

A Report on the Eucalyptus.

A bulletin will soon be issued by the Bureau of Forestry of the U. S. Department of Agriculture entitled, "Eucalypts Cultivated in the United States."

Although of foreign origin the eucalyptus is specially fitted to Arizona, New Mexico, California and western Texas, where its value would be hard to overestimate. Its drought-resisting powers enable it to flourish where no large American tree will grow. It yields oil, gum, nectar for honey bees, furnishes shade for the ranch house, windbreaks for the field crops, and firewood for localities where fuel is scarce. But its chief value lies in the possibilities it holds for the restoration of the bare, dry mountain sides of the desert country and for the protection of irrigating streams. It is specially adapted for such purposes by reason of its rapidity of growth in arid soil.

No native American species can equal the extraordinary development of this exotic from remote Australia. On the ranch of Elwood Cooper, near Santa Barbara, Cal., there are eucalypts twenty-five years old, as great in girth as oaks of 300 years. And time and again the species called Blue Gum has, when cut to the ground, sent up sprouts from the stump which in eight years have reached a height of 100 feet. Nor does this rapidity of growth shorten the life of the tree; for the eucalyptus, in its Australian home, reaches a great age and rivals in size the giant redwoods and the big trees of California.

The author of the bulletin on "Eucalypts Cultivated in the United States," Prof. Alfred J. McClatchie of the Arizona Experiment Station at Phoenix, has devoted ten years to the study of this genus. Besides his observations of its growth in the southwest, he has had the benefit of a correspondence concerning it with the botanists of this country and of Australia, Algiers and France.

The bulletin, while devoting itself especially to the eucalyptus species as they grow in this country, contains short descriptions of their habits in their native home and of their remarkable travels into all the great dry regions of the globe.

Detailed descriptions are given of the best methods of propagating and caring for eucalyptus, which includes directions for germinating the seed, transferring the plant to foreign soil, and setting them in the field. The bulletin contains, in addition, careful, detailed descriptions, illustrated by photographs, of the principal eucalypts cultivated in the United States.

Walnut Handling.

The Walnut Growers' Association of Oxnard has in operation, says the Courier, a plant, like which there are only four in the State. It consists of machinery for grading, bleaching, draining and drying walnuts. The machinery is extensive enough to handle thirty sacks per hour, and from the time the bags are received, weighed and emptied into the hopper leading to the elevator and then to the grader, to the time the nuts have passed through their many stages, is a lapse of but fifteen minutes.

From the grader mentioned above the nuts are carried by the machinery into the bleacher, from this into a draining machine and thence into the dryer, which extends the full width of one end of the building and is heated by a furnace. From the dryer a second elevator takes the ever moving walnuts up into a shoot, down which they fall into bags and are ready for the market.

There is No Such Thing as a harmless cough. The trouble goes from bad to worse unless checked. Allen's Lung Balsam cures the worst of colds. It allays inflammation and clears the air passages.

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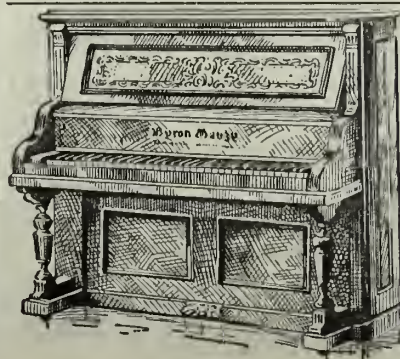
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Cyanide Fumigation for Household Pests.

TO THE EDITOR:—We have moved into a house that is infested with fleas and bedbugs. Chinamen have lived in the house a short time and the hogs have had the use of yard and have rooted out all under the house. We used the strongest kind of lye water to wash all through the house and then painted everything. We frequently take a paint brush and go over the beds with kerosene, but they continue to come. The house is on a large sand hill.—READER.

Household insects can be suppressed by the old-fashioned remedies if one has the patience and persistence of our grandmothers in such matters, but the modern method by fumigation with hydrocyanic acid gas, though very dangerous and needing extra precautions, is on the whole so expeditious and effective that it commends itself to this daring and hurrying age. The method employed in the fumigation of nursery stock is available for this purpose, and stronger gas can be used than is safe on trees when in leaf. We published some time ago a very careful article on the subject by Dr. W. R. Beattie of the Division of Botany of the Department of Agriculture, and we shall reproduce that so far as it relates to the handling of the chemicals and other arrangements, but we shall increase the strength of the formula to meet the formula used for deciduous nursery stock in this State:

One of the most violent poisons known to man is hydrocyanic acid, which may be obtained from cyanide of potassium. The latter is an equally dangerous article, and should be handled with great care. It should not be touched with the fingers, it should not be sniffed and special pains should be taken not to let even a small particle get into a cut or wound. Moreover, it is not well to let the gas which is generated by potassium cyanide get at articles of food, lest it contaminate them. Still another precaution to be observed is not to have a light around where the vapor is, as when it constitutes more than one-quarter of a mixture with air it is explosive.

But, properly handled, this substance is wonderfully fatal to vermin. Experiments by Dr. W. R. Beattie of the Division of Botany in the Department of Agriculture, Washington, D. C., shows that where a room is fumigated by this means, and the gas kept there for several hours—over night—it will destroy mice, cockroaches, flies and other insects. It is recommended that the space of the room be computed, and one ounce of cyanide be used for each 100 cubic feet. A vessel of glass or stoneware should be provided, holding a gallon for every 2000 cubic feet. Use several, if necessary, and run a cord from each to a common point outside the door, where they may be all temporarily fastened. Weigh out the cyanide—twenty ounces for 2000 cubic feet—tie it in a paper bag, and suspend it by the cord over the jar. Use gloves meanwhile. Put in each jar two and one-half pints of water and twenty pints of sulphuric acid for every 2000 cubic feet. Add the acid to the water slowly and stir. The mixture will grow very hot. Dr. Beattie gives these further instructions:

Place the jars beneath the bags of cyanide, spreading a large sheet of heavy paper on the floor to catch any acid that may possibly fly over the edge of the jar when the cyanide is dropped, or as a result of the violent chemical action which follows. Close all outside openings and open up the interior of the apartment as much as possible, in order that the full strength of the gas may reach the hiding places of the insects. See that all entrances are locked or guarded on the outside to prevent persons entering, then leave the building, releasing the cords as you go. The gas will all be given off in a few minutes, and should remain in the building at least three hours.

When the sulphuric acid comes in contact with the cyanide of potassium

the result is the formation of sulphate of potash, which remains in the jar, and the hydrocyanic acid is liberated and escapes into the air in the form of gas. The chemical action is so violent as to cause a sputtering, and frequently particles of the acid are thrown over the sides of the jar. This may be prevented by supporting a sheet of stiff paper over the jar by means of a hole in the center, through which the cord supporting the cyanide of potassium is passed, so that when the cord is released the paper will descend with the cyanide and remain at rest on the top of the jar, but will not prevent the easy descent of the cyanide into the acid. The weight of this paper will in no way interfere with the escape of the gas.

At the end of the time required for fumigation the windows and doors should be opened from the outside and the gas allowed to escape before any one enters the building. A general cleaning should follow, as the insects leave their hiding places and, dying on the floors, are easily swept up and burned. The sulphate of potash remaining in the jars is poisonous and should be immediately buried and the jars themselves filled with earth or ashes.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

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Lo, the Poor Belgian!

The breeding of Belgian hares for market purposes, says a writer in the Rural New Yorker, is not a successful venture. The people of our country have spent thousands of dollars over Belgian hares; it is simply a craze. To begin with, you cannot market them except in cold weather, as people will not buy them in summer, and you have the expense of keeping them all summer to sell in the winter. They have eaten their heads off. Probably by fall they have caught cold, and, when they do, it is hard to cure them. You have got to nurse them like babies, inject medicine up their nostrils two or three times a day, and then you cannot always save them. It is no trick to breed hares, as they will breed every six weeks at the outside. But it is like buying a fast horse—your expense does not begin until after you get the horse. The cost of the horse is nothing—it is the care after you get him that costs, and that is the same way with hares. The people who eat wild rabbits will not buy Belgian hares, as they cost too much. Wild rabbits sell for 25 to 35 cents a pair; you cannot raise Belgian hares for that price apiece. They have to be cooped up all the time or they will not do well, and you cannot feed them on all green stuff. If you do it will kill them. Oats and clover hay are the best feed for them, with occasionally a dandelion or carrot. The coops must be kept clean or the animals will get sick. A person keeping 100 or 200 hares needs a man with them all the time, and he has all he can do all day long if he takes care of them properly. Of course the fanciers who raise them to sell tell great stories and get great prices sometimes, but I do not think one of them with all the high prices can show a profit after all expenses are paid. We have a man in our city (Buffalo) who went into it heavily, advertised in all the papers and got big money for lots of them. This spring he tore down his coops, and what he could not sell he gave away, and gave it up with the loss of one or two thousands.

Belgian hares for table use are a failure, and anybody who has tried it will tell you so. For eating there is nothing that can beat them; they are in comparison to a wild rabbit what a capon is to a chicken—white meat and very tender, but only fit to eat in cold weather.

Machines for Extracting Essence From Lemon Peels.

Consul Alex. Heingartner sends the following from Catania to the Department of State: The important part of this machine consists of two disks of about 4½ inches diameter each, the surfaces of which are indented like a nutmeg grater, so as to hold the peel in place. The disks are placed opposite each other. In the first movement they separate about 3½ inches and receive a half peel (previously deprived of the pulp) from a wheel, the spokes of which project about 1 inch above the rim, which places the peel between the disks just before they meet. The disks revolve in opposite directions and squeeze the essence from the peel without breaking it. The peel is then ejected automatically and a fresh one inserted. The essence as it is extracted is gathered in sponges placed under the disks. The disks can hardly be seen, being hidden by two cups, which prevent the escape and evaporation of the essence.

All the work is done automatically, except placing the peels on the spokes of the wheel which supplies the disks. This work, being very simple, is done by women and boys, who receive 80 centesimi (16 cents) for ten hours' work. The capacity of the machines is 16,000 half peels per day of ten hours. Mr. Rosario di Mauro, a large producer of essence at Giarre, has twenty machines in his factory and is well satisfied with them.

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A Productive Isabella Vine.

Mr. R. L. Houghton publishes an account of an Isabella vine growing on Alameda Farm, Kern county, as follows: This vine is not more than twelve years old. It was planted in its present place in 1892. It was then about three years old, and the main cane was about an inch, certainly not to exceed 1½ inch, in diameter. It is now 6 inches in diameter. It is of a height between 7 and 8 feet on a trellis, and the growth is forced east and west and north, leaving the trunk fully exposed to the sun. I knew that the vine was bearing a very great quantity of grapes, and I made up my mind that this year I would have them picked by some one who would weigh them out under my own supervision and ascertain just how many grapes were grown on the vine this year. The result was 2022½ pounds of grapes—actually weighed out as they were picked—and the party picking the grapes paid for them on the basis of the weight above given.

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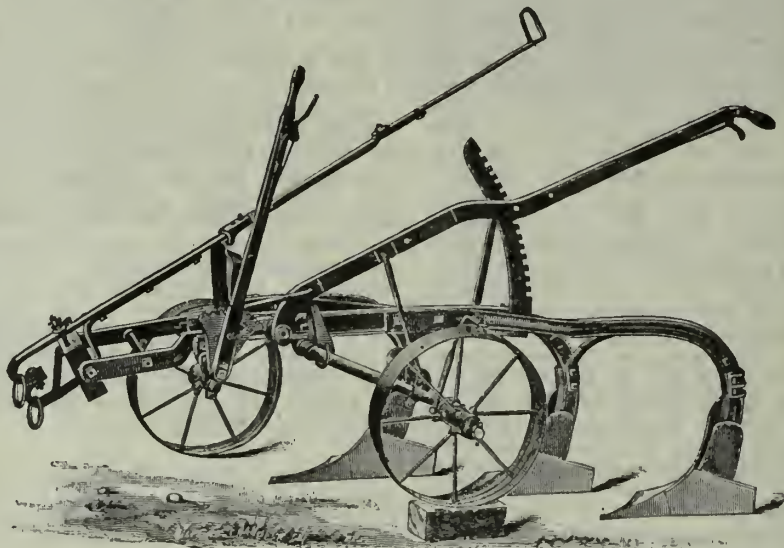
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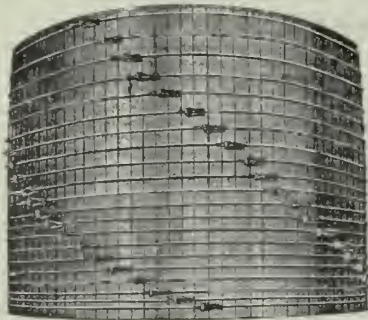
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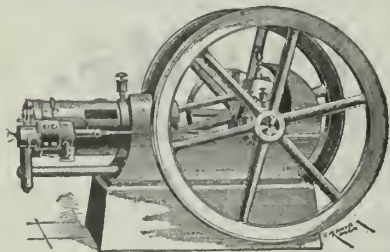


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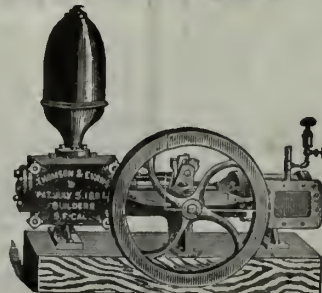
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 20.

SAN FRANCISCO, SATURDAY, NOVEMBER 15, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Nevada-California Mountain Pastures.

The engravings presented herewith are illustrative of the investigation into the sheep pastures of the mountain regions of California and Nevada, adjacent to the old overland line and largely tributary to Reno. As stated last week, this investigation was made by Profs. Kennedy and Doten of the Nevada Experiment Station, and another chapter of their report is given upon another page of this issue. The pictures are quite characteristic of the mountain region whose interests and progress are not sufficiently known to the general public.

On June 3 Dr. Kennedy left Reno for the Constantia ranch, in Plumas county, Cal., and proceeded thence to J. N. Evans' horse ranch, near Fort Sage mountain, where he was joined a few days later by Mr. Samuel B. Doten. After collecting many interesting plants and grasses in this region the party set out on foot to study the ranges lying between the horse ranch and Webber lake. They went slowly through the dry and somewhat barren country lying east of the Constantia ranch, then passed southward through Long valley to Chat, Cal., where they turned to the west, and, passing over a low range of hills, entered Sierra valley.

For several days they studied and collected the plants and grasses growing on the hills surrounding the lower end of Last Chance creek, a region of special interest, because in many parts of it the season's growth of plant life was as yet undisturbed by the sheep. After leaving the Last Chance country the party passed rapidly southward through the eastern end of Sierra valley to Loyalton, and thence by way of Lewis' mill to Sardine valley, and through it to the Little Truckee river. Here they spent several days collecting forage plants and photographing them. They then traveled up the Little Truckee to Webber lake, and on June 25 pitched camp at the head of the waterfall below.

In the region surrounding Webber lake thousands of sheep owned by Messrs. Van Buren & Flanigan were grazing. The hills were covered with good forage plants, and all the sheepmen were glad to point out those they considered most valuable. In this interesting region the party spent three of the bus-

iest and most profitable weeks of the summer's work. Leaving Webber lake, they went next to Lincoln valley by a roundabout way over the mountains. The herders whom they met on these fertile ranges gave them much information of the highest importance.

After a brief stay in Lincoln valley the botanical outfit was guided by P. L. Flanigan's herders through the mountains to Soda Springs station, on the Southern Pacific Railroad. As Soda Springs station is an important shipping point for sheep, the region surrounding it is almost barren of all forage plants. On this account the party left at once for Summit Soda Springs, on the American river. For several days they collected the more valuable plants of this region, then proceeded by way of the wagon road to Talbot's home camp, on the Middle fork of the same river. Here, through the assistance of Mr. Talbot, they gained a great deal of useful information; then, after collecting and photographing the best plants and grasses, they proceeded back

through the mountains to Reno, and so brought the summer's work to an end.

The party walked several hundred miles and slept with no tent for three months on the ground, but did not find any real hardships, unless it was one hungry afternoon when a meek, mild mule strolled innocently into camp and ate everything in sight except the dishes and yellow washing soap.

It is the results of this energetic work in the field which we are now publishing from week to week. The showing of the plants collected and photographed will soon begin, and as they have a wide range in California many of our readers will recognize them.

It is announced from southern California that a large swindling scheme is being prepared to play upon unwary Eastern investors. Options are to be secured upon orange orchards in quantity and stock sold in the East on the basis of these options. The stock buyer will then have share in a corporation which will have no property nor any claim upon any after the options expire. The game rests upon the Eastern stock buyer being too careless to ascertain the difference between an option and a deed, and before he finds this out the manipulator will have his money and perhaps have done nothing for which he can be prosecuted. This may not be all there is in the scheme, but there seems good reason for our Eastern readers to be chary about getting into the fruit business in that way. Investments in titles of good California fruit property are promising, but no one should buy without finding what sort of a claim he has for his money. There ought to be some way on our part to put a stop to such enterprises. They all hurt California, for the swindled buyer charges all his own foolishness up to the State and berates accordingly. The evil is not done by Californians, but by rascally Eastern and foreign operators, who play on California's reputation because it is so good.

FARMERS near Coolspring, Del., recently formed a corporation of their own to can tomatoes and built a factory. Already there have been 200,000 cans of tomatoes shipped, while 300,000 cans are piled in the factory awaiting shipment.

THE prune crop is the largest in the history of Kern county—in the neighborhood of 2,000,000 pounds of prunes. The grape crop is also quite large—probably twenty-five carloads to be shipped.



Sheep Cooling Off on a Snow Bank on Mount Lola.



A Characteristic Scene in the California-Nevada Mountains.

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E. J. WICKSON Horticultural Editor

San Francisco, November 15, 1902.

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The Week.

Another good rain has come and the region south of the Tehachapi has been well covered by it. Figures in the central and northern parts of the State have reached considerably beyond last year's rain receipts and there is enough everywhere to favor land working, sowing and planting, except where there may be, temporarily, a little too much of a good thing.

The winter flight of people to California is already starting in strongly. People who have their eyes upon tendencies in this direction say that we shall have an unusually large number of guests and home-seekers during the next six months. It has been arranged by the railways that cheap rates to California will be taken up again in the spring and as there will be wider announcement this year the influx may be started in time to help our labor supply next summer considerably. Everything seems to be moving forward in California in a very gratifying way.

Wheat has scored an advance and distant markets seem to be acting with the local demand for filling ships and affecting values favorably. Ships are still arriving under charters considerably above current rates. Barley is quiet but steady at unchanged prices. Receipts are light and outward movement fair. Oats are steady, with fair inquiry. The Government will take bids for 1200 tons at Seattle this week. Corn is firm for old and easy for new. Egyptian corn is in light supply and firmer. Beans are rather slower. Bran is easy and other millfeeds steady. Hay is doing well, even with increased receipts. Meats are unchanged, except that hogs have fallen, but the market is steady, though supplies are large. Choice creamery butter has a rising tendency, cheese is firm, and eggs well sustained, though receipts are increased. Potatoes and onions are unchanged. New crop oranges are selling well though quite green. Table grapes have advanced under small supplies. Dried fruits are firm and fine lots in demand at an advance. Honey is firmly held. Wool is firm with small offerings.

The death of Professor George Husmann of Napa will be received with sincere regret by many readers of the PACIFIC RURAL PRESS, to whom he was well known by frequent contributions to our columns. He had just passed his 75th birthday and was in good health until overtaken by a fatal illness of four days duration. Professor Husmann came first to California in 1851, but returned to Missouri where the chief part of his active life was passed in practical viticulture and horticulture in that State. For three years he filled the chair of Pomology and Forestry in

the University of Missouri. In 1881 he returned to California, settling in Napa valley, and here he has had property interests and filled an important place as a promoter of horticultural and viticultural pursuits. Professor Husmann was a man of high literary attainments—publisher at one time of a viticultural journal, and always a valuable contributor to magazines and papers. He was the author of several books and was looked up to as an authority by viticulturists and horticulturists.

Cattle diseases are again appearing too prominently. In Kern county during the week Dr. C. H. Blemer found anthrax on one of the large ranges and says it is the worst outbreak he has ever seen in California. He vaccinated 2500 head of cattle to prevent the spread of the disease. The owners of the ranges lost from 25% to 30% of their stock. Two men who were employed to skin the dead cattle became afflicted with the anthrax. One of the men recovered but the other was at last accounts in very serious condition. Since then County Veterinarian Eddy announces that there is anthrax in that county and that both cattle and horses are affected. It is believed that the disease started somewhere between Copperopolis, in Calaveras county, and Oakdale, in Stanislaus county. Within the past three weeks six cattle have died on Roberts island, 10 miles west of Stockton, and it is reported that others have died more recently. Dr. Eddy sent some of the blood to Dr. Barbat, the bacteriologist of the San Francisco Board of Health, and he pronounced the disease anthrax beyond a doubt. Recently horses in Stockton are said to have contracted the disease. Such facts should arouse our stockmen to the desirability of vaccination. It is the only recourse which promises safety, for treatment of the disease itself avails little. Stock owners should be awake on this matter.

Even if the rates are high, it may be of much advantage to have an open route to Eastern markets for our fresh vegetables, so that the growers may take part in the movement if they desire. It is announced from Los Angeles that Wells, Fargo & Co.'s Express quotes rates on small lots and on lots of 1000, 2000, 5000 and 10,000 pounds to Denver, Kansas City, St. Louis, Chicago and New York. On small lots the rate to Denver is \$4 per 100 pounds, to Kansas City \$4.50, to Chicago \$5 and to New York \$6.50. On lots running into thousands of pounds there is a decreasing scale corresponding with the increasing size of the lots. On lots of 10,000 pounds the rate to Chicago is \$3.50 per 100 pounds, and to New York \$4.50 per 100 pounds. Of course, these rates could only be endured by the fancy trade for out-of-season masterpieces, but it is well to start the movement on the small shipment basis. It may work out well in bringing distribution closer to the small grower at more favorable rates if the business shows good features.

The Watsonville apple growers have appealed to the agricultural department of the State University to attack their local problems as was done with the peach worm in Placer county. We hope it may be done. One in the trade says that the apples grown in the Pajaro valley this season will bring to the growers returns aggregating \$1,500,000. The crop has been somewhat light, but the quality of the fruit is unequaled. In all, about 2300 cars have been produced, each car being figured to hold 640 boxes. The export shipments amount to about 250 carloads, most of the fruit going to England and Scotland. This is all very encouraging but it also seems to be true that a very large fraction of the crop, some say 50%, was ruined by the codlin moth. This loss ought to be ruled out and nothing but expert investigation and demonstration can do it.

San Diego is coming to the front on silken wings. It is announced that the old experiment of a silk industry is to be tried again in that region and that mulberry cuttings are already in demand. That is the proper way to begin; that is the way it always has begun since the multicoulis craze of the last century. Next will come the silkworm egg craze and then the worms. It always goes in regular order and it has always stopped properly when the cost of labor comes into view. We hope it will be different in San Diego. It may be that there the silken lining will come down out of the clouds. We will watch and

see; meantime we advise our readers not to lose their heads when it does fall.

The Pacific coast States may be considerably benefited by the decision of the Chinese Empire to admit flour and grain free of duty. Such was the arrangement in the new tariff schedule which went into effect last week.

QUERIES AND REPLIES.

Olive Pickling.

TO THE EDITOR:—Our pickling was not a success last year, most of the olives softening badly before they were out of the water, after being in the water hardly a week. We have had fair success for several years with the fresh water process, processing a few gallons for home use in two-quart Mason fruit jars, and have had no signs of softening before. We have the softest and purest of spring water and have used great care in cleanliness. The olives were slit. Some authorities say, "Do not slit," and others say it is commonly practiced. We have bought them both ways. Why is the pickling of ripe olives still in an experimental stage, and why has it "not yet been reduced to an exact science?" If it is done successfully in Italy, why has not the process been obtained from there? Everyone seems to tell the same story of unreliable formulas and uncertain results.—A READER FOR TWENTY YEARS, Atlas, Napa county.

Olive pickling is difficult because you are dealing with a perishable product and endeavoring to preserve it practically without using preservatives. If you use brine as is used to pickle meats, the olive would keep; but no one wants olives so salty nor cares to bother with extracting the excess of salt by freshening. If you used first salt and then vinegar, as you do with cucumbers, you could make a long-keeping pickled olive, but you do not want a sour olive. If you should boil the olive as you do other fruits with sugar, pound for pound, you would have a preserved olive, but no one wants that. With the olive you have, indeed, to do more than in any of the above cases, because you have to extract the bitterness, and that process invites decomposition of the tissue, and then you desire to preserve the substance with only salt enough to serve as flavoring. The proposition is intrinsically difficult and beset by dangers, and it is not wonderful that all can not succeed with it.

We apprehend that the Mediterranean people do not make ripe pickled olives for very long keeping unless they use more salt than we like to. They do not use ripe olives in commerce, so far as we know. The American people and, we presume, the English people also, have been scolded for having such bad taste as to eat green olives—but it is proverbially wrong to contend about tastes. We imagine that the Spaniards make green olives for export because they are more easily given keeping quality, and it is really fortunate for them that the entire world has such a taste for them. California was, on the whole, a little "fresh," as the boys say, for undertaking a ripe olive propaganda before they knew whether they could furnish the goods in safe form or not. Many have failed at it and a few have succeeded. They have succeeded because they have studied deeply into the conditions which arise in the processing and modify the treatment accordingly. The business does not depend upon a formula, and the Europeans do not know any more about it than we do, except, perhaps, that they learned long ago not to bite off more than they could chew. Anyone who has the cook's art and patience to look closely and apply means and materials as needed can make good ripe pickled olives, and no one can do this by a recipe alone. The cook is something more than a cookbook. Enough olive pickling recipes have been published. What is essential is that people should learn how to use them.

Esparcette and Alfalfa.

TO THE EDITOR:—There is a plant supposed to be esparcette spreading quite rapidly on a neighbor's place in the thinnest rocky soil imaginable. For a number of years it made a poor showing. The leaf looks very much like alfalfa. Stock keep it eaten close to the root all summer. Has this plant virtues that would make an experiment worth while?

I find alfalfa scattered over my place from the droppings of cattle that have fed on the ripe plant and then wandered off in search of other feed. If not eaten by cattle these plants frequently grow 3 feet high. You seldom recommend alfalfa for wild land, and I would like to know why. Is it that the seed

would not germinate on uncultivated ground? Or that the plant does not do well? I do not agree with you entirely in looking for winter-growing plants for this section at least. The winters are so wet stock should not be allowed to run promiscuously. It is cheaper to feed some hay. The old saying that in winter stock destroy more feed than they eat is entirely true here. The clovers, alfalfa, oats, cheat, etc., are all right when ground is fit for stock, but from the first of July until winter I have seen stock go 2 miles through dry feed and browse, to nibble at a few stumps of rye grass or alfalfa. So far I have not got them to eat salt bush, but hope they will when they know how highly it is recommended, and get use to it.—HOWARD OVERACKER, Jr., Napa county.

It would be interesting to have the plant you speak of determined, and could not some arrangement be made to protect enough to get a blossom next spring? What you say about the leaf seems to warrant the conjecture that it may be esparcette, and if so it is very important to make it known. Esparcette is a forage plant with exceedingly satisfactory reputation abroad and is held to be better adapted to dry lands than alfalfa. Hitherto it has not made very satisfactory growth in California, but possibly having established itself in a locality which suits it it would become important. For that reason it is desirable to have the identity of the plant you mention carefully determined.

Alfalfa will establish itself in rather dry places sometimes and wherever it manifests such disposition it should be encouraged, for, although the growth will be much less than upon free, moist soils it will grow enough to make it well worth having. One reason why we seldom recommend alfalfa for wild lands or for lands which cannot be flooded, is that it is a constant invitation for gopher settlements, and when they start in they generally use up the plant. Poisoning and trapping seem to be too difficult and expensive for field practice. Flooding once a year, at least, for destruction of gophers, seems to be the cheapest protection, and we hesitate to recommend the plant where this cannot be accomplished, considering the cost of breaking up and putting in. Scattering the seed where it is likely to catch on itself is a good pastime and worth more than it costs. What you say about the undesirability of pasturing in winter is quite true for hilly lands in wet regions and for heavy lowlands which are badly injured by the tread of the stock, still there are lands of rather loose character in regions of scant rainfall, which will yield their owners no value worth speaking of unless winter pasturage can be secured from them. These pasturage propositions are largely local and what may be good policy in one district may be bad in another.

To Soften the Butter.

TO THE EDITOR:—Please tell me how to make my butter less hard. Even in ordinary weather it is too hard to spread on bread. What is the cause? We feed alfalfa hay and just now some cull apples.—M. I. C., Chatsworth, Los Angeles county.

You can improve the butter in the way you desire by feeding about two pounds of oil cake meal a day with the alfalfa hay. You may, perhaps, do it more easily and cheaply by churning at a little higher temperature. Let the cream stand in a warm room for a couple of hours before churning, or plunge the jar of cream in warm water for a few minutes. Jersey cows and too much dry feed are the combination which cause you trouble. When you get fresh grass it will be corrected.

The Sugar Prune in Oregon.

TO THE EDITOR:—The French prune is too small in our soil and climate for profit. I have 1500 bearing trees that I think of working into the Sugar prune. Two years ago I got 10 feet of Sugar prune wood. This spring I grafted 200 trees from the growth which it made. I had a few prunes on the first graft that ran twenty-two to the pound. They were two weeks earlier than the French prune, which is favorable in our climate where it is apt to rain in October. The quality was about the same as the French prune, and the fruit ripened two weeks earlier than the Italian or the French. My Sugar prune grafts bore too heavily, the fruit going through cold rain and frost, which entirely killed the other varieties, proving the Sugar prune to be iron-clad. The grafts were covered with fruit, almost like bunches of grapes, so that late in the season the weight of the fruit tore off the limbs badly. I found it difficult and tedious to thin the fruit on account of the heavy tenacious stems and the great number of prunes. Brown rot attacked a few prunes in these bunches

and I think if I had not taken preventive measures by thinning I should have lost most of them. I ask your experience with the Sugar prune, its merits, and its merits as a commercial product.—READER, Portland, Oregon.

So far in California experience with the Sugar prune has been very satisfactory. It is prolific, early and satisfactory in drying. We have not encountered so far losses by brown rot, nor has the difficulty in thinning, owing to character of the stems, been reported. Probably brown rot is less serious with us than with you. Although it is working sad havoc in some districts with the apricots no injury to prunes has yet been reported. It is impossible to tell what the future in this respect may bring forth.

Beet Sugar vs. Cane Sugar.

TO THE EDITOR:—Perhaps a year ago you gave a recipe for testing sugar, as to whether it is "beet" or "cane." Will you kindly insert again, or tell me in what issue it may be found.—READER, Chatsworth, Los Angeles county.

We can not recall such a publication, nor does the index show it. We remember stating that beet sugar could sometimes be told by an odor which had not been removed by refining. Beet syrup is rank, and imperfect refining does not free the crystals from it. As for other comparisons between the two, an investigation is now being carried on by Dr. G. W. Shaw of the University Agricultural Experiment Station at Berkeley. He would like to know what trouble has arisen in any use with beet sugar, and we wish all having trouble would write to him about it.

Pear Blight.

TO THE EDITOR:—How can I get the latest information about pear blight? Has any one been able to check its progress during the past season? Do you consider it absolutely unsafe for me to plant pears in this locality, though no blight has been found here? If convinced that pears are unsafe, I could plant some variety of plum or prune on myroblan root with safety. I must choose one or the other.—H. W. R., Marysville.

The latest about the pear blight is found in the columns of the PACIFIC RURAL PRESS. We shall print next week the latest statement made by the representatives of the bee keepers. No progress has been made in checking the disease in Kings and Fresno counties, where it is worst. We would not hesitate to plant pears in places where the disease has not yet appeared. It may be long in coming and meantime pears will be in demand. The more injury is done in affected districts the better chance for the free districts. A few crops at good prices will make it worth while to have taken the risk.

The Good Without the Ill of Johnson Grass.

TO THE EDITOR:—Is there any forage plant that has the good features of Johnson grass without its bad features? I have several acres of pure sand land that would make fine hog pasture if planted to Johnson grass, and which will produce nothing else that I know of. Now, I could hardly plant Johnson grass with a clear conscience. I sincerely believe that it is as much or more of a crime to plant Johnson grass as to wantonly set fire to the mountain forests, where our rivers have their birthplace, or to do anything else that will work to the detriment of one's neighbors or to posterity. Beyond question Johnson grass would pay me.—HOWARD REED, Yuba county.

We think our correspondent is a little over-sensitive. If we had a piece of waste land distant from cultivated ground we would put in Johnson grass, if convinced that it was best for all the purposes intended, and guard as much as possible against its escape, but we would not plant it near to a neighbor's line. It will not pass over dry pasture lands very rapidly, and if you pasture it closely the hogs will keep it from seeding. We suppose you have good reason for thinking that alfalfa will not suit the land, but usually land that is moist enough to carry Johnson grass will carry alfalfa for a time and until you get a good deal of value out of it. We do not know of anything that will take the place of Johnson grass on sandy land, if you cannot make alfalfa go on it.

Harvesting English Walnuts.

TO THE EDITOR:—Please inform me through your paper of a simple method of curing a small lot of English walnuts for the market.—M. B. W., San Jose.

The early nuts should be picked up frequently and not allowed to lie upon the ground to become stained.

When apparently well matured shake or jar the branches and strike off those which do not fall, using a long, light pole. Put the nuts in shallow trays or boxes with slat bottoms to allow them to dry—keeping them drying three or four days and shaking them daily to change their points of contact. Then use a wire screen, 1-inch mesh, and grade out the smaller ones to sell by themselves. Wash the nuts quickly with a hose or otherwise to remove the dirt and moisten the outer surface to take sulphur well. Sulphur about half an hour, just as you would fruit for drying, and dry the sulphured nuts for ten hours or so before sacking. For handling nuts on a large scale there are machines and dipping processes, which the Anderson-Barngrover Co. of your own town will explain to you.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 11, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather was cloudy and threatening most of the week, with heavy rain at the close. Light frosts in some places on the 5th caused no damage. High winds prevailed on the 9th. Rivers and creeks are rising rapidly. The rain will be of great benefit, enabling farmers to continue plowing and seeding, and improving pasturage. Late wine grapes were somewhat injured by the rain. Oranges are ripening and coloring rapidly, and picking is progressing in some sections. Raisins and prunes have yielded excellent crops, and there has been very little loss from storms.

COAST AND BAY SECTIONS.

Generally cloudy or foggy weather prevailed during the week, with high winds and heavy rain at the close. The storm was unusually severe in the northern coast counties, causing a rapid rise of creeks and rivers, but no serious damage has been reported. In the central and southern districts the rainfall was lighter, but sufficient in most places to thoroughly saturate the soil. Plowing and seeding will be resumed as soon as possible. Green feed is becoming plentiful. Volunteer grain is looking well. Potato digging and corn picking are nearly finished. Heavy fruit shipments from San Jose continue. Oranges are in excellent condition.

SAN JOAQUIN VALLEY.

The first part of the week was generally clear, with pleasant days and cool nights; the latter part was cloudy, with rain commencing Sunday and continuing Monday. The rain was fairly heavy Sunday night and very beneficial in putting the ground in good condition for plowing and seeding, which has heretofore been retarded owing to lack of rain. The raisin and prune crops are now practically all cured and under shelter. The second crop of grapes is being shipped to the wineries. Egyptian corn is being harvested and the crop is good. The orange crop is good and reported ripening rapidly. Green feed has started in some localities and stock are reported doing well.

SOUTHERN CALIFORNIA.

Warm days and cool, cloudy nights prevailed during the week, with heavy fogs along the coast and light rain Sunday and to-day in nearly all sections. The recent rains have been of great benefit to pasturage and orange groves, and in many places have softened the soil sufficiently for cultivation. Raisin making is still progressing in San Diego county. Walnut harvest is nearly completed. Oranges are in excellent condition and have commenced coloring in some sections; it is estimated that the fruit will be larger than that of last season and the yield slightly less. The acreage in celery and vegetables will be larger than last year. Plowing and seeding have commenced.

LOS ANGELES SUMMARY.—There was some dry plowing and seeding previous to the general rainstorm which set in at close of the week. The rain will start farm work in earnest, besides improving vegetation generally and orchards particularly.

EUREKA SUMMARY.—All farm work is suspended on account of the heavy rains. Rivers are rising quite rapidly. The yield of potatoes in the valley is estimated at fifty bushels to the acre.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 12, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall to Date—Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the Week	Minimum Temperature for the Week
Eureka.....	5.48	8.86	6.82	6.61	66	44
Red Bluff.....	5.52	9.90	4.24	3.25	62	42
Sacramento.....	1.64	3.30	2.90	2.32	63	42
San Francisco.....	1.37	3.28	2.31	2.69	64	50
Fresno.....	2.00	2.40	1.68	2.41	64	46
Independence.....	.01	.38	1.09	.28	68	36
San Luis Obispo.....	1.46	3.46	3.90	2.47	70	44
Los Angeles.....	1.98	2.37	2.46	1.36	74	43
San Diego.....	1.39	1.35	.75	1.82	70	52
Yuma.....	.40	.61	.22	1.10	82	50

THE DAIRY.

Aeration of Milk.

By CHARLES E. MARSHALL of the Michigan Agricultural Experiment Station.

So many values and advantages have been attributed to aeration by dairymen that it has been thought pertinent and important to make an exhaustive and scientific study of the subject, especially in its relation to the handling of milk. In this popular and brief resume of some of the results obtained, I desire to emphasize those only which have a direct bearing upon the care of milk and which may be utilized to advantage.

WHAT AERATION DOES.—Aeration does have an influence upon milk, an influence which may be measured, but its importance may not be so great as is sometimes assigned to the process. When milk leaves the udder of the cow, the gas which is predominant, carbonic acid gas, begins to pass from the milk and the gases of the air take its place. This is brought about by the natural diffusion and solubility of gases.

The fact that carbonic acid gas exists in such large percentage does not indicate that this gas has any detrimental effect upon the individual consuming the milk directly from the cow; this would not accord with known facts. As soon as the milk leaves the udder of the cow it comes in contact with germ life; it is this germ life which is controlled largely by the conditions of the milk; in it there are germs of many kinds, some of which flourish readily where there are traces of oxygen only, and others where there is an abundance of oxygen. These germs produce the various fermentations of milk, consequently it makes a difference in the character of the fermentation whether there is an abundant supply of oxygen or not. Bacteriologists have shown that when there are only traces of oxygen present in a fermenting substance as milk there is more likely to result from the fermentation toxic substances or products which are really detrimental to the body. As milk comes from the udder there is little oxygen and much carbon dioxide, but after the aerating process the oxygen materially increases and the carbonic acid gas decreases. It therefore follows that aeration favors those fermentations which produce no poisons, because where there is a plentiful supply of oxygen, toxic substances are not formed.

As the milk passes from the teats of the cow to the pail it is exposed freely to the air. At first thought, one might conclude that there is a free inter change of gas during the milking process. This is partly true, the carbonic acid gas fortunately falls about 20% in amount. However, the process of aeration is difficult after a certain reduction of carbon dioxide has taken place or a partial equilibrium of gases established; and if a more perfect aeration is to be secured it is necessary that the milk be brought intimately in contact with the air by creating the greatest possible surface for the longest possible exposure. The more perfectly the drop can be shattered or a film established the more satisfactory the aeration.

If agitation of milk therefore aids aeration, and if during the few moments immediately after milking the interchange of gases between the air and milk is greatest, it follows that where milking is in process the air must be pure, otherwise the foulness of the air will be incorporated in the milk. Milk absorbs gases. What must be the condition of the air of a stable in which all sorts of fermentations are going on and in which are odors of diverse kinds? These obnoxious substances are in the air and must pass into the milk with the air.

In addition to milking, frequently the milk is further agitated in the stable by passing it from pail to pail or even straining it and also sometimes aerating it. Such methods are rightly condemned and the reasons for such condemnation are conclusive. Milking, and the handling of milk, should be carried on in pure air. It is sometimes the practice of milk producers to pour milk directly from the milking pail into a ten-gallon can. From the foregoing this must be considered reprehensible, for filling the can excludes the oxygen, and, if the milk is not cooled, a temperature most suitable for the development of germ life is present—conditions in short which favor harmful fermentations. This is why there are recorded so many cases of poisoning as due to improper care of the milk, eliminating the factor filth, a common evil.

PERFECT AERATION DESIRABLE.—Many dairymen have studied the action of aeration upon butter and cheese making, but without any positive results favorable or unfavorable. The results in the light of our experiments can be explained by a failure to recognize a difference between perfectly aerated and unaerated milk. The milk employed by these experimenters will show no great increase in the oxygen supply between that which was considered aerated and that considered non-aerated. If a wide difference could be established there would probably result appreciable differences in the products mentioned, due to the influence the oxygen would have upon the ripening of cream and cheese, and the keeping qualities of the butter and cheese. These suggestions

are tentative and subject to experimental evidence.

It has been hinted that aeration has caused an increase in the quantities of butter and cheese. Perhaps oxidation has some influence upon the fat and casein, but thus far I have been unable to demonstrate it. In my work I have obtained marked peptonizing action by germs within twenty-four hours under an exclusion of oxygen, but this is not common. There were two samples of milk which were under conditions which excluded oxygen; these clarified completely in twelve hours in the incubator, that is, all the casein dissolved; usually, moreover, the milk lopped from lactic acid fermentation. If there is any difference therefore in the quantities of cheese obtained it is due largely to proteolytic fermentation induced by bacteria which might be favored by the exclusion of oxygen.

Our experiments further show that the number of bacteria is not reduced by aeration as has sometimes been suggested, and that the germicidal action of milk is not effected.

THE MATTER OF TAINTS.—It has long been known that animal odors and taints may be removed by aeration. Proper aeration will do it; however, aeration and cooling must not be confounded in this matter. Cooling apparently removes odors and taints, but such disappearances are due to the chilling of the milk under which condition the milk gives up the volatile substances with reluctance, doubtless owing to the reduced power of volatility of the substances themselves when cold. When such odors and taints are removed by aeration the removal is permanent unless they are generated by bacteria, which continue to grow after aeration. Odors and taints may be due to any one of the following causes:

1. Absorption of gases from the air by the milk.
2. Physiological processes of the cow.
3. Disease processes of the cow.
4. Bacterial growth in the milk.
5. Introduction of odoriferous substances into the milk.

Odors in the air emanate from fermentations, foods, etc.; aromatic food substances are likely to pass through the body and be secreted in the milk; a high temperature in an animal is likely to reveal itself in the milk; many taints arise from bacterial development in the milk; and frequently sufficient filth gets into the milk to give it a distinct flavor—all of these or any one of these causes may be the immediate producer of odor or taint.

How aeration should be conducted is a matter of considerable importance, consequently we have added a few suggestions:

1. Aeration should be conducted at body temperature.
2. Aeration should be carried out over the most extensive surface possible and as slowly as possible.
3. Aeration should take place only in a pure atmosphere.
4. Aeration is best accomplished immediately after milking.
5. Aeration should precede cooling.
6. Aeration and cooling simultaneously conducted cannot yield the most satisfactory results.

THE FIELD.

The Best Time to Cut Alfalfa.

By PROF. W. P. HEADDEN of the Colorado Agricultural Experiment Station.

There is a very generally accepted notion that there is a considerable difference in the value of the respective cuttings of alfalfa for feeding purposes, the third receiving the preference for milch cows, especially if it was made without the plants having been touched by frost, the first and third for sheep feeding and so on. That there should be a diversity of opinion is quite natural; and a generally prevailing notion among intelligent persons, whose financial interests are touched by their daily practice, is usually based upon something more definite than their notions. But the judgment of individuals is almost as varying in regard to this as one can well imagine its being on any possible subject, and the testimony of the people when taken individually leaves one in a quandary as to whether they are not nearly all equally good. The more explicit question as to the best time or stage of development of the plant to cut it for hay is the one which is most often raised, without special reference to the first, second or third cutting. It is this question that I shall try to answer, somewhat fully for the first, and more briefly for the second.

WAYS OF DETERMINING THE FACTS.—There are two means of investigating this subject. The first is by the study of the chemical composition of the plant, the second by feeding experiments. Both methods have been employed, but the series of experiments in feeding have not been so extensive as is desirable, and the results so far obtained justify tentative conclusions only.

If we take the chemical composition as our basis for judging, there are a number of considerations which we must take into account. The purpose for which the hay was to be used would make some difference. Many farmers consider the weight of hay

that can be made from an acre in preference to the quality. The judgment again will vary with the purpose that the party has in view, whether he intends to feed it to his farm horses, to steers, to sheep or to milch cows. Popular opinion recognizes that alfalfa hay varies in its value for different purposes, and it is probable that there is some good reason for this opinion, whether the analysis shows it or not. The eating of the pudding, however, is the proof thereof. So far as the composition is concerned, the best time to cut alfalfa would be at that period when it would produce the greatest number of pounds of the respective food elements expressed in some common standard.

One of the merits of hay of this class—hay made from leguminous plants—is that it is rich in nitrogen, whose percentage we multiply by 6.25 and put down the product as proteids. As alfalfa hay is characterized by its richness in proteids, we will say more about them than of any of the other classes of food elements.

WHEN IT WILL MAKE THE MOST HAY.—When we express results in percentages, we do not give the actual amounts produced per acre unless we also state the weight of hay produced. This is an important factor, and one which we must take into account. We usually assume that this is thoroughly understood and that it is accepted as a fact that the crop increases in weight from the time of budding till it reaches or slightly passes full bloom, and then decreases. The amount of this increase will vary with a number of conditions; but the following figures, based upon the results of observation, may serve to give a definite idea of how much this increase amounts to. If we cut enough alfalfa in bud to make 100 pounds of hay, the same alfalfa would make 126 pounds if allowed to stand till in half bloom and 145 pounds if allowed to stand till in full bloom; if allowed to stand longer, it would decrease. If the question were, "When shall we cut alfalfa in order to make the most hay?" the answer would be, "When it is in full bloom." The question as presented to us is, "When is the best time to cut alfalfa?" This time is evidently that at which we will have, not the largest yield of hay, nor of the best quality, but the largest yield of digestible food ingredients. This answer considers two factors—composition and digestibility. Every feeder will mentally add, "But there are other things to be considered," which is true, but it is assumed that the animals will eat the hay of which we are writing and will relish it.

CUTTING FOR FEEDING VALUE.—We have given the amounts of hay which the same quantity of alfalfa would give when in bud, in half bloom and in full bloom, using the figures obtained for our Colorado alfalfa. The 100 pounds of early cut hay will contain 15 pounds of albuminoids and 1.5 pound of amids; the 126 pounds of hay, alfalfa cut in half bloom, will contain 15.8 pounds of albuminoids and 2.9 pounds of amids; the 145 pounds of hay cut in full bloom will contain 19 pounds of albuminoids and 2 pounds of amids. Leaving the value of the amids out of the question, for they are assumed to have only a small value as compared with albuminoids, and reducing these figures to the basis of a pound, we find the relative values to be 1.16 for the early cutting, 1 for that cut in half bloom and 1.08 for that cut in full bloom; or, stated otherwise, 86.2 pounds of alfalfa hay cut in bud, or 92.6 pounds cut in full bloom, are equal in value, using the albuminoids as the criterion, to 100 pounds of alfalfa hay cut in half bloom, so that alfalfa hay cut in half bloom is inferior to that cut in full bloom, and still more inferior to that cut in bud. In this statement we assume that the albuminoids are equally digestible at the three different stages of development here specified. If this be true, the largest amount of digestible proteids would be obtained by cutting in full bloom, for, while the relative values of the hay cut in bud to that cut in full bloom is as 100 to 107, the yield is about 100 to 145, leaving an advantage of 38 pounds of hay on each 145 pounds of hay cut in full bloom. These figures refer to the first cutting.

The result of experiments made in the artificial digestion of the proteids is slightly in favor of the hay cut when the plants are in full bloom, though the difference is not great.

THE BEST TIME OF ALL.—From the considerations set forth above—i. e., first, in regard to the total weight of hay; second, in regard to the actual quantity of proteids obtained; third, in regard to the digestibility of the proteids which we took as standard—the period of full bloom is indicated as the best time to cut alfalfa for hay.

I have repeatedly asserted that there are other qualities contributing to the general character and acceptability of a fodder than those shown by the percentages given in the statements of our analyses. We may yet be able to learn how to determine much more by means of chemical analyses than we are now able to do, but it is probable that there will remain many things which will have to be referred to the actual feeding results for their solution, and even then we will doubtless have to be satisfied with aggregate results and forego the pleasure of knowing many details.

A FEEDING TEST.—I know of but one series of experiments made with animals to determine the coefficient of digestion of the hay cut at different

periods of the plant's development, and that was made in Utah. The result of the feeding of the first cutting agrees with the statement made above relative to the artificial digestion, i. e., that it is slightly higher for the hay cut when the plant was in full bloom. The result in the case of the second cutting was in favor of half bloom as the best time.

The conclusions reached by Mr. Mills of the Utah Station as the results of feeding experiments are that the most rapid gains are made on alfalfa cut just before the blossoms appeared, and the least gain on such as is cut a week after full bloom. The hay cut at the intermediate period of full bloom is better than the latter, but quite inferior to the former. Mr. Mills represents the gains as 100 for hay cut before bloom, 77 for hay cut at full bloom and 68 for hay cut one week later. The two earlier cuttings were eaten more readily than the latest cutting. Mr. Mills further states that, pound for pound, the values of the cuttings stands as follows: Before bloom, 100; full bloom, 78; one week after bloom, 81. There is a question of what Mr. Mills termed full bloom, but he gives the reader who is acquainted with Utah conditions the fairest possible means of judging, i. e., one week after the blossoms begin to appear, and for his third cutting the plants were one week older. His first and last cuttings were fourteen days apart.

Mr. Sanborn of Utah, Bulletin 31, gives the results of feeding experiments as follows: Amount of early, medium and late cut alfalfa hay eaten by steers is essentially the same, being 15.16, 14.33 and 15.42 pounds per day. The gain is 0.778, 0.234 and 0.328 pound per day for the first cutting; the daily consumption of hay per steer is 15.53, 16.02 and 14.42 pounds; the daily gain is 0.743, 0.751 and 0.169 pound for the second cutting.

THE SAME RESULTS REACHED.—The feeding experiments are decidedly in favor of the early cutting, calculating the value on pound for pound of hay produced. But if we calculate its value in terms of beef produced per acre, we come to the same conclusion at which we arrived from the consideration of its chemical composition and the relative crops produced at the respective periods. Mr. Mills summarized the results of his three seasons' feeding as follows: To produce one pound of gain—beef—it requires 18.21 pounds of hay of the early cut, 33.44 pounds of the medium cut, 23.97 pounds of the late cut (page 11, Bulletin 44). But we have seen that the relative quantities of the early, medium and late cut are 100, 126 and 145; accordingly we would obtain for the values of the respective cuts in terms of beef, 5.4 pounds for the early, 3.8 pounds for the medium and 6.0 for the late cut. We would, therefore, answer the question in so far as it pertains to the first cutting—that the best time to cut alfalfa is at the period of full bloom, for at this period we not only get the largest amount of hay, but also the largest return in pounds of beef per acre. The results of feeding experiments with the second cutting lead to the conclusion that the best time to cut this crop is what Mr. Mills designated as his medium cut.

I conclude that, after allowing for a little latitude in the use of the terms "half bloom," "full bloom," "late bloom," etc., the time to cut alfalfa in order to get the greatest value per acre is at the period of full bloom, and that there is a period of about a week during which its value is essentially constant.

THE RANGE.

Summer Ranges of Western Nevada Sheep.

NUMBER II.

By P. BEVERIDGE KENNEDY and S. B. DOTEN in Bulletin 51 of the Nevada Agricultural Experiment Station at Reno.

CHARACTER OF GRAZING LANDS.—Nevada sheep for the most part subsist on the natural vegetation of the country throughout the entire year, there being usually no hay provided for winter use. Hence, the general plan is to graze the sheep in the foothills, open forests and high mountains during the summer and in the sagebrush country during the winter, driving them farther south only as compelled by the snow. This has led to the distinct classification of the range into "summer range" and "winter range." The latter will not be dealt with in this bulletin, as it is a subject of such great importance that especial investigation of this part of the problem must be made at some future time. In general, the forage of the winter range consists of a number of different species of sage or sagebrush, such as black sage, white sage, salty sage, spring sage and shad scale.

The summer range may be roughly divided into different classes, according to the location, altitude, kinds of forage and other vegetation growing upon it—such as open sagebrush country, open forests, denser forests, high, snow-clad mountains, creeks and valleys. To the herders the plants that the sheep feed on are weeds, brush and grasses. Under the head of "weeds" are placed all the sunflowers, parsleys, tomato plant and plants of a similar character. By "brush" is meant all plants of a shrubby

nature, such as the serviceberry, snowberry, buckbrush and willows; and under "grasses" are included the sedges, rushes, reeds and all plants of a grass-like appearance.

In an average season the bands of sheep will leave their winter quarters about the middle of March, or earlier, and gradually work north to one of the permanent ranches or camps, where facilities for shearing and dipping are to be found. During the latter part of March and the beginning of April the greatest care must be given the sheep, as it is the time for lambing, which, if not properly attended to, will cause great loss to the sheep owner.

OPEN SAGEBRUSH COUNTRY.—During the early spring months the sheep are usually in the undulating, open sagebrush country, in the vicinity of a dip and shearing camp, so that the different bands may be easily called on in turn to be sheared and dipped, and then started for the mountains with their lambs. In the middle of summer this region might be called a semi-desert country; but from the winter rains and snow the soil has become thoroughly soaked, so that the roots of the Indian millet grass, dwarf fescue grass, the false tickle grasses and the bunch grasses are well supplied with moisture and are able to produce a short growth of rich, green, tender forage. Following these closely come the lupines, "filaree" and many annual plants which furnish a large portion of the forage at this season of the year. There is but little doubt that considerable harm is done to the forage on the range at this time, as the close grazing of these grasses, followed by a long period of drought, makes it almost impossible for the plants to produce a good growth again, so that they can bear seed that year.

OPEN FORESTS.—But little difference is noticed in the character of the vegetation until the timber line is reached. Here may be found open spaces in the forests on which are growing abundantly patches of lupines, sunflowers, tomato plant, members of the parsley family and a number of nutritious, succulent clovers near the springs and creeks. The soil on these lands in the latter part of June is for the most part rather dry on the surface, so that the grasses whose roots do not penetrate the soil to any depth have become dried up and are not eaten to any extent by the sheep. It is on this character of vegetation that the lambs are finished off and made ready for the market. The shipping of the lambs usually begins about the middle of June and continues until about the middle of July, or even later. The ewes and lambs are gathered into corrals, the lambs counted and then driven to the shipping point. Here the lambs and the old ewes that are considered of no further service for breeding purposes are shipped, and the stock ewes are driven back again on the range to be held over the winter.

DENSER FORESTS.—In the region 15 to 20 miles south of the Central Pacific Railroad the forests still retain their primitive condition to a considerable extent. No timber has been cut, and deer, bear and other wild animals are met with. Fires, however, have burned deeply into many of the large trees, but rarely were these trees entirely destroyed by fire. The only forage of importance under these conifers was the bearbrush, or buckbrush, a considerable quantity of it being eaten by the sheep. While the fires do but little harm to the large timber, yet they are very destructive to the small, lodge-pole pines which cover extensive areas in the gullies in the lowest parts of the mountains between the ridges. These trees are seldom more than a foot in diameter, with a very thin bark, and, as they grow very closely together, they are quickly killed. The trees are not burnt up, however, but only killed and are soon blown over in every direction by the winter storms, forming an almost impenetrable mass, making it very difficult to herd sheep through them. The wild tansy or yarrow was the only forage plant growing abundantly in these denuded places. It is in the open spaces in these forests, and especially in the mountain meadows, that the finest feed is to be found. These meadows are of different types, some of them supporting a sod of sedges and grasses, others for the most part of two different species of five-fingers, while a large number are composed of blue daisies. Considerable moisture is found on them during the early summer months, but in August they were in fine condition for sheep grazing.

HIGH SNOW-CLAD MOUNTAINS.—On these mountains we found large banks of snow which are never entirely melted. During the month of August the writers had the pleasure of walking on these large banks of perpetual snow. They were from 200 to 300 yards long and from 6 to 12 feet deep. Around the margins of these large patches the snow gradually melts, causing the grasses even at this season of the year to spring up fresh and green and make excellent, nutritious forage. Large patches of serviceberry and snowberry were also found near the summit of these mountains. The grasses on the sides of the mountains were too far removed from the snow to receive any benefit from it and were dried up with an abundance of seed on them. The sheep passed over them without either destroying or eating them. In fact, they aided in the distribution of the ripe seed by scattering it and trampling it into the ground.

The most noticeable features on this range were

that a dwarf plant with conspicuous yellow flowers, belonging to the sunflower family, was not touched; the abundance of dried-up grasses, the distorted bushes of the serviceberry and the loosening of the soil by driving sheep down the steep mountain sides, rendering it more liable to be washed away by the fall rains.

CREEKS.—Throughout the entire region visited were many creeks, varying greatly in size. These can easily be detected at some distance on the low lands by the growth of willows, alders and trembling aspen growing along their banks. Skunk cabbage, grasses and clovers are the most important forage plants found in these locations. During the early summer months the sheep do not feed on the vegetable growth on the borders of these streams, as they have a striking distaste for forage on wet lands. But when the creeks dry up in August the sheep readily eat up the skunk cabbage and other forage plants. Some difficulty sometimes has to be contended with by the herders in getting the sheep across the larger creeks. The method adopted is usually that of crowding the sheep together from the rear, until the foremost ones are forced over, when the rest follow readily.

No particular harm is done to the forage in the vicinity of the creeks, as the plants are not eaten off until late, and the autumn's rains soon come and start them growing again.

VALLEYS.—The region of the Sierra Nevadas north of the Central Pacific Railroad is intersected by numerous valleys from 1 to 20 miles in extent. The only time that the sheep are allowed to graze in these valleys is in the fall of the year, when the sheepmen sometimes rent the third crop of alfalfa from the ranchmen for grazing purposes. These valleys are owned and occupied by permanent ranchers, who have large herds of cattle, both for beef and dairy purposes. The pastures in these valleys are usually well fenced and contain fields of alfalfa, Kentucky blue grass or native grasses and sedges.

POISONOUS PLANTS.—It was a surprising fact that no cases of the poisoning of sheep by plants on the range were met with throughout the entire summer. Past experience in certain canyons, known as "poison canyons," seems to be the foundation on which the sheepmen work. The districts in which large numbers of sheep have been poisoned in past years are now well known and the herders have strict orders to keep away from them. The danger from loss by poisoning is not nearly so great after the month of June, as the tempting spring plants that are poisonous are usually dried up by this time. In many instances when questions in regard to poisonous plants were asked, the reply was that a few years ago in a certain canyon about a mile over the ridge a large number of sheep were poisoned; but just which plants were the poisonous ones did not seem to be known. The writers wished very much that they could investigate these "poison canyons," but the time at their disposal would not permit of it, so that work in connection with the poisonous plants of this region still remains to be done. The most practical work that has been done on poisonous plants on the range is that by V. K. Chestnut and E. V. Wilcox, entitled "The Stock-Poisoning Plants of Montana," Bulletin 26, Division of Botany, U. S. Department of Agriculture, 1901.

A number of plants known to be poisonous were incidentally collected by the writers during the summer, such as blue larkspur, tall larkspur and aconite. The blue larkspur is carefully avoided by sheep; the tall larkspur, although sometimes nibbled, will not poison the sheep unless large quantities of it have been eaten or when they have empty stomachs, while the aconite did not occur in sufficient quantities to be considered. Pictures and descriptions of poisonous plants will be given later in these articles.

THE VETERINARIAN.

A Startling Report About Sorghum Poisoning.

We have had much about investigations into the cause of loss of stock feeding on second-growth sorghum. In all reports hitherto it has been stated that no specific poison has been found by the chemists. Now something quite different comes in a letter from Colorado to the Chicago Live Stock Gazette as follows:

Kafir corn poisoning has developed to quite an alarming extent in Colorado. For the past two years there has been in the State what might be termed a Kafir corn craze. The fact that it could be raised in the arid and semi-arid regions quite successfully without irrigation recommended it to many farmers and stockmen. But the alarming cases of poisoning from cattle eating it has caused a check to the enthusiasm with which it was at first received. One of the most fatal cases occurred on a dairy farm east of Brighton, Colo. The farm was owned by a widow, who had a small tract of land in a certain wheat field that lay above the irrigating ditch, and, therefore, could not be irrigated. The widow, learning that Kafir corn would grow without irrigation, sent away and got 20 cents worth of seed and sowed it on this small

piece of land. The plant grew, but in consequence of the severe drouth of last summer it was very stunted, not growing more than a foot high.

After the widow's wheat had been harvested, she told one of her boys one morning that he might turn the cows into the field and let them graze on the Kafir corn. The boy did so and the cows made directly for the corn patch and began eating the plant ravenously. The cows numbered thirty-one. Inside of five minutes after they had begun to browse on the Kafir corn twenty-five of them appeared to become violently sick. Inside of the next ten minutes the first cow was dead. The boy who had driven them into the field endeavored to drive the animals back to the barn; but they were too sick to be driven, and inside of an hour after the first symptom had appeared twenty-three of the cows were dead. Two that were poisoned recovered.

The case was called to the attention of Dr. George H. Glover, the head of the veterinary department of the Colorado Agricultural College, and he in turn presented the facts in the case to the head of the chemical department of the college. But that department being too busy, Dr. Glover wrote down to the Nebraska Experiment Station asking that some of their chemists be sent out to make an investigation of the case, having learned that that station had the subject under examination.

Dr. Glover, however, had canvassed pretty thoroughly in his own mind the symptoms of Kafir corn poisoning, as shown by various Colorado cases, and became convinced by the very virulence of the poison that it must be prussic acid. Prof. S. Avery, chemist of the Nebraska Experiment Station, arriving at Fort Collins on Oct. 10, in response to Dr. Glover's request, quickly confirmed the belief of Dr. Glover that the Kafir corn poison consists of prussic acid, pure and simple.

A quantity of Kafir corn from the fatal field near Brighton had been sent to Dr. Glover, and together he and Prof. Avery experimented with it upon a cow at the college farm. The cow ate freely of the corn upon an empty stomach and was in no wise injuriously affected. But the corn had been thoroughly cured. The fact had been established that, although the Kafir corn contains its full complement of prussic acid, it is not injurious in effect when perfectly cured. Some of the very corn upon which the college cow was fed was submitted to a chemical analysis by Prof. Avery while at the Colorado Agricultural College and the usual amount of prussic acid was discovered.

Prof. Avery, in conversation with your correspondent, said that the thing that most forcibly struck him when he began the investigation of the poisoning in Nebraska was that the symptoms were almost identical with those of prussic acid poisoning. He then began a series of chemical analyses, and found that this reasoning had been well founded; that the Kafir corn contained large quantities of prussic acid.

He said that the conditions favorable to Kafir corn poisoning were that the plant must be green when eaten, stunted in growth, and that the cattle most likely to be affected were underfed cattle going into a field of corn on empty stomachs. The Kafir corn poisoning is confined almost entirely to the arid and semi-arid regions, a condition probably attributable to the fact that in those regions the plant usually attains but a stunted growth. Prof. Avery says that, so far as he has been able to find out, Kafir corn becomes absolutely harmless as soon as it is perfectly cured.

Answers by Dr. C. W. Fisher.

FOR A SOW WITH A WEAK BACK.

TO THE EDITOR:—I have a sow that is weak in her back across the kidneys; drags her hind parts; eats well. What shall I do for her? Please answer through your paper.—J. KOLB, Dinuba.

Your sow may have a rheumatic soreness in the muscles, paralysis from an injury or a parasite called the kidney worm (*Stephanurus dentatus*). This is a round worm, 1 inch to 1½ inch long, sometimes found in the kidneys, liver and muscles of the back over the kidneys.

You had better try the following as a general treatment: Wood charcoal, sulphur, sodium sulphate and antimony sulphide (black antimony), of each ½ pound; sodium chloride (common salt) and sodium hyposulphite, of each ½ pound. Pulverize and mix thoroughly. Give large tablespoonful to hog weighing about 200 pounds once a day in feed. Give her good feed and clean, dry pen. If your sow should die, examine her for the kidney worm. Please report if you should find such trouble.

A HAIRLESS HORSE.

TO THE EDITOR:—I have a five-year-old mare; she has run on the range most of her life, where no horse disease is known; she appears healthy and keeps fat, but about two years ago her mane and tail hairs dropped out, and gradually the hair all over her came out in patches, and spreading. In July I called in a veterinarian, and he gave me both internal and external medicine, which I used, following out his orders to the letter, but she appears worse, instead of better. A kind of gummy substance oozes from the hide.—E. HOPE, Blocksburg.

Sometimes horses loose their hair in a manner dif-

ficult to explain, but usually the cause can be found. You speak of a gummy substance oozing from the skin, which indicates an existing inflammation. This may be a chronic condition from an indigestion of long standing, or from parasites such as cause mange or ringworm. I would suggest that you consult your veterinarian and write more in detail about the case and treatment given. Then suggestions could be given him that might secure better results.

San Mateo.

CARL W. FISHER, D. V. M.

FRUIT MARKETING.

Raisin Marketing This Year.

As intimated in the market report columns of the PACIFIC RURAL PRESS last week, the marketing of the raisin crop this year is the most brilliant and successful marketing operation yet accomplished by growers in California.

Concerning it the Fresno Republican in a recent issue says: The record is unprecedented, not alone in the history of the Association, but in the history of the raisin industry in Fresno county. To sell the largest crop in the history of the Association within a month and a few days of the naming of prices, at the highest net price to growers and for cash on delivery, with 10% already in hand, is an achievement that had never before even been thought of, not to say accomplished. It is nothing short of a brilliant stroke of business capacity of the very highest order.

It is a source of the greatest satisfaction to every one that this has been done, and that there will be no carry-over to sugar and deteriorate, to be sold at the end of the season at reduced figures and to be placed upon the market to fill a demand that should be supplied by the new crop. The packers will carry these raisins, instead of the Association carrying them, and the packers will put them into the channels of trade before they deteriorate.

The growers have already been paid \$1,250,000 received for raisins already sold, and the money has been accumulating faster than it has been possible to write checks and pay it out.

The directors have not found it necessary to borrow a single dollar to pay the growers promptly and in full. To handle a business of this magnitude without the capitalization of a cent is truly a remarkable triumph. The growers by almost unanimous vote gave increased borrowing power to \$500,000, but the directors so managed the marketing of the immense crop that it was not necessary to use any of it.

When the present directors took hold the situation was such that weaker men and fainter hearts would have given it up. After weeks of deliberation and consultation they formulated the plan of uniting the packers. They went quietly about their work, always keeping in mind the highest interest of the growers, avoided newspaper controversy and public imbrolios, and finally, in an unobtrusive way, announced the consummation of their plan.

The season opened with the Eastern market sluggish and in some places altogether lifeless. There was absolutely no confidence in the Association. The trade would not believe that the combine controlled the crop. It had not done so in previous years, although public announcement was made that it had. Buying was only from hand to mouth. There were enough packers—of no local standing but of unknown rating in the East—offering raisins to strengthen the belief that the Association was not in control here on the coast. Hence buyers held off, awaiting the crash of the combine and with it of prices. The first thing the Association had to do was to put a quietus on those packers who were demoralizing the market. This was done effectually. The local bankers were called in and the situation explained to them. They agreed not to advance money on bills of lading, and as soon as the bankers took this action these outside packers went out of business.

Raisins then moved more freely, but still the trade feared to buy freely, still doubting the stability of the Association. The war among the seeders broke out, and the trade, not understanding it, thought it was the regular internecine war in the ranks of the growers. This situation was met again quite as promptly and effectively. The Association had to prove its strength to the world. It was done in this way: The seeders were notified that the Association would confirm goods for seeding purposes at a rebate of ½ cent, provided application was made for sufficient quantity. The result was surprising. Confirmations were put in for really more raisins than the directors had expected and some 17,000 tons were sold.

This proved to the trade that the Association had a firm grip on all the raisins obtainable, else the local packers would not buy so freely. Since then the Eastern market has been active, even brisk. The packers all received many orders.

The directors then conceived the idea of selling out the remainder of the crop. They announced several days ago that on November 3 they would advance the price of raisins. That was merely an invitation to the packers to buy up the rest of the crop before the advance should be made. The directors were perfectly willing to sell at the present prices, and the

growers were also more than willing that the crop should be sold. The packers took the hint and assembled with applications for confirmation. The orders amounted to 11,000 tons of all varieties—loose, layers, seedless, Sultanas and Thompson Seedless. The directors protected themselves by a clause in regard to over-confirmations. Many of the raisins thus sold are still in the field, and hence it cannot be stated with accuracy whether all the grades applied for can be filled.

These confirmations, together with the goods sold to the seeders and those taken loose by the Eastern trade, clean up the entire crop, with perhaps some odds and ends that will be disposed of in the natural course of business. Every grower should, if deliveries are at all prompt, receive full payment for his crop by January 1 and it may not become necessary this year to borrow a single dollar.

After confirmations had been received the directors kept their word good and advanced the price ½ cent on two and three-crown loose Muscatels, and 10 cents a box on two and three-crown layers.

Fresno Growers' Dried Fruit Co.

In the course of a circular setting forth their plan of organization and operation, the above company says:

The statistics of dealers given to producers as to production cannot be depended upon. They have been found unreliable this year and in others.

No dealer can alone raise the selling price in the Eastern market, and we surely cannot expect that all the dealers will bind themselves together in order to benefit the producer. The producers must do this for themselves, and the only way they can do this is through organization. Fresno organized alone cannot do it, but California organized can. By pooling together we can always be sure of a living price for our dried fruit. By remaining without organization we can never depend on receiving its true value, and the products of different parts of the State will always be placed in unnecessary competition, as has been the case in the past.

The outline of plan of organization and operation is as follows:

At each shipping or receiving point where a sufficient number of growers deliver their fruit, a local organization shall be formed similar to the "Fresno Growers' Dried Fruit Company," which local organization shall receive the dried fruit as the same is delivered by the growers, and shall inspect, grade, pack, insure and prepare the same for market, and store the same in a packing house or warehouse, until sales are made by the central organization hereafter described. Where there are not enough members delivering at any receiving point to make separate organization practicable, the growers at such places shall join the association of some other convenient point, and both receiving places shall be under the same management. Each local organization to be its own management as regards financing and handling, packing, storing and insuring fruit, and all local matters.

All of these local companies are to be represented by a central organization, established at whatever point may be considered to be most advantageous, the managers of which shall be selected by and from delegates from the local companies.

The duties of the central organization shall be: Establishing prices, attending to all the selling for the local companies, establishing uniform grades, assisting in the organization of new companies and other matters of a general nature as could be better attended to by a central body than locally, such as gathering statistics by aid of the local companies, etc. Each local organization is to pay its pro rata toward the expenses of the central company, which shall be limited to a certain per cent of the amount of money received from the sale of fruit.

The contract form adopted by the directors designates a consideration of \$1 and the grower agrees to "sell, assign, transfer and set over unto the said company an undivided one-tenth part of his interest and ownership (free of incumbrance) in and to all the crops of peaches, pears, plums, nectarines and apricots," grown in 1903 on the land described.

Then follows an agreement of the company to prepare for market and to dispose of the goods with the "endeavor to obtain the highest market price." The crop is to be in the exclusive possession and control of the company up to the time of sale of the goods.

The contract provides for the operation of the association's business along lines similar to those followed by the raisin growers' association.

ARIZONA APPLES.—The largest apple crop the Verde valley section has ever known will be harvested this fall. Owing to the Jerome mine being closed down much of the crop will have to be shipped to other markets. The few that are sold at the home markets bring 4 cents per pound.

J. FRATES lost 2800 sheep in Colusa county this week by the rising of the Sacramento river. Inexperienced herders. Loss \$10,000.

Agricultural Review.

ALAMEDA.

FARM IMPROVEMENTS.—Livermore Herald: The farmers of the valley have been making more improvements in the way of new barns and fences this fall than for many years past.

SHEEP RANGING.—Local flocks which aggregate 75,000 sheep will remain on the San Joaquin islands until about Christmas.

STOCK RANGE.—Joseph and John Gleese have bought the Goodfield ranch of 320 acres for a stock range.

BUTTE.

MATCH FACTORY.—It seems that the branch of the Diamond match factory is to be located at Chico instead of Durham or Oroville.

FIRST ORANGES from this county were sent East from Palermo October 31. They were Jaffas. Help is scarce.

CALAVERAS.

BUHACH FARM.—Mrs. Hill is the owner of a large buhach farm near Burson.

COLUSA.

EVAPORATING PRUNES.—Farmer: J. B. Wilkie of this place is now building a fruit dryer at Princeton (similar to the one at Yuba City) to dry 200 tons of prunes. The dryer here (Yuba City) has dried over 100 tons of fruit nicely.

IN GREEN AND GOLD.—Sun: Colusa is now beautifully green, with many flowers and an abundance of lemons and oranges.

FRESNO.

SALMON IN SAN JOAQUIN RIVER.—Daily Republican: Reports are that salmon have been taken from the San Joaquin river in this county every day in violation of law.

MINNEWAWA CREAMERY.—Has been bought by G. E. Peoples.

WAREHOUSE DISCONTINUED.—The J. B. Inderrieden Co. packing house has been dropped from the list of Association warehouses.

REDLAND APPLES.—Reedley Exponent: I. H. Wilson brought to this office some winter apples of different varieties which prove that our red lands will produce fine apples.

KINGS.

NEW SETTLERS.—Hanford Journal: There are a great many people who have just arrived in Kings county from different parts of the Union looking for homes. It is estimated that the population of Kings county has increased 500 in the past six months. Many are going to the lake lands.

ARMENIAN COLONY.—Sentinel: Mr. Markarin of Fresno was down in the lake country looking for a place for an Armenian colony.

SUGAR BEETS.—S. Mouser says the results of beets planted on land $\frac{1}{2}$ mile north of Hanford, part on an alkali spot and the rest on good land, were very satisfactory. The beets that were in the alkali did the best, some of them growing to a weight of nearly ten pounds. He thinks sugar beets need but little irrigation.

REINCORPORATION.—Lemoore Leader: The Lower Kings River Water Ditch Co. has recently been reincorporated under the name of the Lemoore Canal & Irrigation Co.

FREIGHT SHIPMENTS out of Lemoore for the past six months have been four times as great as for the same period last year.

A LATE FREESTONE PEACH.—O. C. Brown has peaches in his orchard, near Lemoore, at this late time in the year. The flesh is pure white, with rosy cheeks, very firm for a freestone, and of very good size.

LOS ANGELES.

NEW BEAN COUNTRY.—The farming interests between Wilmington and Redondo have centered largely on the culture of beans. Much of the land is sandy.

TO THE ENDS OF THE EARTH.—Pomona Progress: R. M. Teague has just shipped an order of trees to Cuba and a sample order of twenty-five varieties to the Government Experiment Station at Honolulu. Last year he shipped 300 orange trees to France, and word came only a short time ago that all but twenty-five were doing well. Some have been shipped to the Philippines, Chili, Mexico, Australia and Florida.

LEMON ASSOCIATION.—Pomona Times: At the San Dimas Lemon Association's recent annual meeting, reports of officers showed no withdrawals from the Association during the year, but an increase of 500 shares, or fifty acres, to the membership. It was recommended by Manager Harwood that the Teague method of open curling be tried, and suggested by Prof. Turner and Manager Dreher of the San Antonio Fruit Exchange that the lemon

crop will in the near future be a better paying crop than oranges, owing to the fact that there is a comparatively small belt in which the absence of frost permits the successful growth of lemons.

TOP PRICE ON ORANGES.—Fourteen boxes of a car of Valencia Late oranges, shipped by J. A. Brock of San Dimas to New York, sold for \$15.50 per box.

OVERLAND ARRIVALS.—Twelve overland trains, loaded with colonists, arrived in one day recently. Many of the colonists were mechanics.

A WALNUT TOWNSITE.—Riverside Press: The Townsend-Robinson Investment Co. of Long Beach has purchased 2200 acres of fine walnut land in the La Habra valley, with 220 inches of water from wells, and commenced the plans for a townsite.

OVER 20,000 VISITORS.—The office and exhibit of the San Joaquin Valley Commercial Association is reported to have had 20,000 visitors since the opening in February last.

MENDOCINO.

NEW WOOL POINT.—Ukiah Republican-Press: The Irvine-Muir Co. purchased the major portion of the wool grown in northern Mendocino county at the late sale in Willets. The price paid was 14 cents or better. This sale was the first in the history of Little Lake valley. Hereafter much of the product which has heretofore been hauled to Ukiah will be sold there.

JAPANESE PHEASANTS.—Ukiah Dispatch-Democrat: The Japanese pheasants liberated here several years ago are doing finely.

RAILROAD CHANGE.—The Mendocino Lumber Co. has purchased the railroad rails belonging to the Usal Lumber Co. at Usal.

GOT A BEAR.—Point Arenas Record: Robert Caughey and West Rickard killed a black bear weighing over 400 pounds on the latter's place up the coast recently.

MERCED.

EARLY SNOWS.—Star: The summits of the Sierras are now covered with snow, presenting a beautiful sight to the beholder in the valley. It is seldom that so much snow falls on the mountains at so early a date.

MONTEREY.

CREAMERY AT GONZALES.—Tribune: Gonzales is to have a creamery. Since the cutting up of the land which can be irrigated by the Gonzales Water Co.'s canal it has been found that a creamery would pay.

NAPA.

THE VINTAGE CLOSED.—St. Helena Star: The grape crop in the upper part of the valley rivaled that of the palmest days in viticulture. At Greystone winery 3500 tons of grapes have been crushed. Laurence Guiguls received \$1442 25 for the grapes from 4000 vines. Of dried fruit, the St. Helena Fruit Drying & Packing Co. at Barro station handled about 500 tons of green prunes, besides other varieties of fruit, and all of it has been sold.

ORANGE.

RECOVERING ORCHARDS.—Fullerton walnut orchards, formerly affected with disease which reduced the crop last year, are locally reported largely recovered this year and to have produced quite well.

CALIFORNIA PEANUTS.—Santa Ana Blade: The peanut crop is now being gathered and will be a short yield, probably between twelve to fifteen carloads of 600 forty-pound sacks to the car. Most of the crop comes from around Tustin.

THE BEET GROWERS' BATTLE.—Committees from Compton and other beet-growing districts in Orange and Los Angeles counties will probably combine to demand from the American Beet Sugar Co. a fair price for beets, or else the business of beet growing will be stopped forthwith. The company proposes a cut in prices for beets.

CHILI PEPPER CROPS of Anaheim and Yorba will amount to over 100 tons. The harvest is now on and the peppers will be ground to conserve their strength.

A SWEET MONSTER.—Mrs. O. E. Culver of west Orange has sent in to the Chamber of Commerce a sweet potato grown on her ranch which weighs nearly twenty pounds.

THE CELERY ACREAGE.—The total number of acres of White Plume celery in the district is 668; controlled by the association, 548; Golden Heart, 1144; in association, 865. Total acres in district, all varieties, 1812; in association, 1413.

FRUIT GROWERS INCORPORATE.—The Santa Ana Dried Apricot Association has recently formed and incorporated.

PLACER.

WHITNEY ORANGES.—Placer Representative: J. Parker Whitney expects to

ship 10,000 boxes of oranges by Thanksgiving Day.

SAN BERNARDINO.

INDEPENDENT REDLANDERS.—Facts: Eclipse Orange Association, independent, is preparing to ship a large quantity of fruit this season.

SAN DIEGO.

IMPERIAL CROP.—Los Angeles Journal: The test rice crop has been harvested and the showing was so entirely satisfactory that next year will see much of the available land devoted to rice culture. Reapers are now at work in the sorghum and millet fields. More than 8000 acres of wheat will be put in this next month, and the barley planting will cover from 4000 to 5000 acres. The cotton has attained such a growth that it is difficult to cultivate. Within the last week 700 head of cattle were brought into Imperial and distributed among the ranchers to be fed for beef.

SAN JOAQUIN.

PROFITABLE GRAPES.—Lodi Sentinel: It is doubtful if the vineyardists ever had such a successful year. John Dutton, whose place is situated 5 miles this side of Lodi, made a net profit of \$1400 off two acres of Tokay grapes. He shipped only gilt-edged fruit, selling the rest to the winery. Altogether, it is safe to say that Mr. Dutton made pretty close to \$2000 off his two acres of Tokay grapes. Dan McCoy, off an acre, harvested 20 $\frac{1}{2}$ tons of Tokay grapes. Others harvested 14 tons of Mission grapes to the acre. No wonder the acreage of grapes is all the time increasing here.

IRRIGATION-EXTENSION.—Another large district has been placed under irrigation by the completion of a farmers' built ditch from Escalon to 3 miles beyond Ripon. Another extension of the main system of which this is a branch is contemplated, and the main ditch of the Cowell system is being extended to French Camp to ensure drainage.

SAN LUIS OBISPO.

HOUSES SCARCE.—Tribune: It is next to impossible to secure any kind of a dwelling, either high or low-priced, in rental. Two trainloads of excursionists took breakfast at the Ramona yesterday morning.

SANTA CLARA.

MAMMOTH APPLES.—Mercury: Frank Schubert, of the Fredericksburg Resort, is the owner of three monster apples grown in Sonoma county, of which the two largest—Rhode Island Greenings—measure 12 $\frac{1}{2}$ and 13 inches in circumference, respectively, while a deep dark red apple measures an even foot around the center.

THE COMING FLOOD.—Daily Mercury: Secretary McMahl of the Santa Clara Valley Development Association says: "I hold that California has just about reached a period where further development of her horticultural resources weakens rather than strengthens her, until she develops her manufacturing interests. We now have on file at the headquarters of the Improvement Club something more than 3000 letters of inquiry simply from those who say that they have investigated the State and its resources and have decided that Santa Clara county is the one for them."

SANTA CRUZ.

IN PAJARO VALLEY.—Pajaronian: The hills are beginning to show the good effects of the late rains. The tonnage of sugar beets will be far short of that of 1901, but the percentage of saccharine matter is large. Articles of incorporation for the Santa Cruz, Capitola & Watsonville Electric Ry. Co. have been filed in the county clerk's office; capital stock \$350,000. Sales of dried apples have been made here at from 5 to 6 $\frac{1}{2}$ cents. The Simpson-Hack Co. has shipped nearly 100 carloads of apples from Pajaro valley this season. For next season they will build a packing house 300x60 feet, equipped with elevators, miniature railroads, nalling machines, and all other up-to-date appliances for the apple packing business, for which building they have purchased nearly three acres of land. San Francisco canners have been hoavy purchasers of cull apples during the past month, paying about \$7.50 per ton. The Adamson drier has put out an extra choice quality of dried apples. Sixty-two carloads of apples were shipped from Watsonville last week; season's shipments to date, 583 carloads. The apple season now closing has not been prosperous to orchard handlers of choice merchantable stock. The condition is going to affect marketing conditions in this district. The Langford apple is sold out again. The packers say they never get enough Langfords to fill their orders.

SOLANO.

VACAVILLE FRUIT SHIPMENTS.—Reporter: Shipments of green fruit from Vacaville this season were 846 carloads,

mostly to the East, but considerable to Alaska and to the northwestern States, which every year take more. Dried fruit shipments are expected to aggregate 250 carloads. Total, 1906 carloads, for which were received \$1,002,000, of which \$350,000 was paid for labor, it is said.

VACAVILLE FRUIT.—The total number of carloads of fruit shipped during the season ending October 16 was 833 against 829 up to October 17, 1901.

SONOMA.

RACERS HOME.—Millard Sanders, with the trotters and racers from the Santa Rosa Stock Farm, is at Santa Rosa, direct from Memphis.

GRAPE GROWERS' DANCE.—The grape growers and wine makers of Glen Ellen and the Sonoma valley will give their annual harvest ball at Glen Ellen, November 15.

MORE SMALL FARMS.—Santa Rosa Press-Democrat: President George H. Baxter of the Sebastopol Bank last week purchased the Freeman tract near Sebastopol and will divide it up into 30-acre lots.

\$12,000 LOSER.—It is reported that the grape crop on the Hill ranch at Vine Hill this season brought \$12,000 less than it would had the grapes on the ranch not been contracted some years.

FIRST PRIZE POPCORN.—Healdsburg Tribune: Luther Bell exhibits a stalk of home grown popcorn not quite 6 feet tall that has twelve perfectly formed, fine, plump ears of corn upon it, or one for each ear joint. Mr. Bell has about one-quarter of an acre of this corn and no stalk has less than four ears on it.

CREAMERY RECORD.—Ukiah Republican: The Bodega creamery from October, 1901, to October, 1902, made 138,601 pounds of butter from 2,936,354 pounds of milk and 7751 pounds of cream. A dividend of \$5 per share was recently paid.

STANISLAUS.

NEW SETTLERS.—Modesto News: W. W. Thayer of Wisconsin, as a representative of twelve families of that State, has made arrangements for a portion of the Fin de Siecle Co.'s land in the Turlock district. The families will arrive some time this fall.

TEHAMA.

THE TURKEY CROP.—Corning Observer: The turkey crop this year will be larger than usual, with prospect of high prices. Some buyers are in the field, but few sales will be made until holiday time.

OLIVE PACK.—The Maywood Canning & Olive Pickling Association have commenced the season's pack of olives from the large acreage about Corning.

RANGE LANDS LEASED.—The Longs have leased to John Simpson and John Finnell, Jr., the 500-acre range in Lassen county, known as Hayden Hill, and all their lands in Tehama county for five years at \$2400 a year.

TULARE.

FRUIT CONTRACT JUDGMENT.—The Superior Court of Tulare county, in the case of A. Levis and Geo. Nunnemaker vs. the Royal Packing Co., awarded plaintiffs damages of \$1116 and costs for refusal of the packing company to accept four carloads of dried prunes last year on contract.

FIRST ORANGES.—Visalia Times: The first carload of oranges from Tulare citrus belt went through from Porterville for the East on Oct. 31st.

EXETER has a bank.

MORE ORANGE ORCHARDS.—Register: George Frost, Dr. Squires, Philip Baer and others have nearly 300 acres at Colvin's Point, all of which will ultimately be planted to oranges. Adjoining them, C. B. Simmons of Visalia will also set an orange grove.

WITHOUT A WINERY.—Tulareans shipped to wineries elsewhere upwards of 6000 tons of grapes this year. Each ton pays \$1 in freight, which is lost to them.

PACKING ORANGES.—Porterville Messenger: The four big orange packing houses began running full blast last week.

YOLO.

1902 FRUIT SHIPMENTS.—Winters Express: Green fruit, 276 cars. This does not include express shipments or the fruit sent to Vacaville to make up carloads that our neighbor gets credit for. Dried fruit shipments, 74 cars, and much more yet to go. A large part of the dried fruit went foreign direct. Other produce shipments include 24 carloads melons, 99 carloads grain, 2 carloads hogs and 2 carloads sheep.

YUBA.

CATTLE SALE.—Marysville Democrat: At the Haile & Waltz sale at the Noyes ranch, recently, about 800 head of cattle were sold, the principal buyers being Doc Evans of Gridley, J. W. Browning of Grand Island and T. B. Hutchins. Good prices were paid.

THE HOME CIRCLE.

The Twin Sisters.

COUNTRY TO CITY:

My children toil for fruit and grain,
Burned by the sun, or drenched by rain;
And winter smites my farm and fold,
With his keen scimeters of cold.
When harvests yield a scanty store,
And hunger haunts the cottage door,
Deep is the anguish that I feel
Of one who wounds yet cannot heal.

But, sister, thou hast gold to spare;
Traffic and wealth on street and square;
Fruits brought in from furrow and tree;
Treasure and food of land and sea;
Homes for the helpless; temples high,
Piercing the silence of the sky;
People of every creed and clan,
And the large fellowship of man.

CITY TO COUNTRY:

Like arteries from my mighty heart
Flow tides of Life that meet and part;
With surge of gain, or drift of loss,
And undercurrents none may cross.
I feel the fever and the jar,—
The ceaseless clash of things that are,—
Yet cannot pause to heal with rest
The vast throng clamoring at my breast.

But, sister, thou hast oil and wine
For all who share thy life divine
(Thy myriad life of field and wood
Blessed by thy bounteous motherhood);
Flowers that breathe in forest nooks;
The quaint, sweet minstrelsy of brooks;
The free-horn birds, and tireless bees,
And the vast solace of the trees.

—William Hamilton Hayne in *Country Life in America*.

After Many Years.

Miss Martha Pendleton was an authoress, though none of her stories had ever been printed. She was fifty-five years old, gray, and bent with much stooping over her desk, a small one for the lap, on which she had written for twenty-five years. As soon as a story was completed it was sent to some publisher, and when it came back, as it always did, it was laid in an old trunk of Miss Pendleton's, there to molder with others of its kind.

To anyone working for mere name and fame, such unflinching return would have been discouraging, but Miss Pendleton had other motives. "Writing was her one talent," she said, "and she should make the most of it, as for the results, they were in the Lord's hands." She had felt her talent stirring in her all through her bare, unlovely girlhood, and when in her thirteenth year, the stern old father, who thought anything but hard manual labor was a sinful waste of time, had died and left her mother and she comfortably provided for, she had set to work with her beloved talent as one who came into his own.

Her mother had always believed in her and encouraged her surreptitiously, and after the death of the tyrannical old man, watched her for two happy years working tirelessly at the desk. Then she died, holding her daughter's hand and whispering, "I should hate to leave you, Marthy. I should most want you to come, too, but your life's work is all before you, and I wouldn't deprive the world of you yet. I'll go on and explain it to father."

Miss Pendleton lived alone after this, taking scrupulous care of the house and writing her stories. It was wonderful how the names and localities in these stories varied, considering that Miss Pendleton had never been a hundred miles from home and was not a great reader; but the situations varied rarely, and the ending might always be depended upon. "No one shall ever lay down a story of mine feeling disappointed," she had declared; so good always triumphed, and lovers might be relied upon to get together sometime, if not till the last paragraph.

Her friends all bore common or Scriptural names, but never by any chance did less than *Orlandos*, *Eglantines* or *Florissimas* figure in her stories, and she was especially fond of *Jukes*, *earls*, *kings* and *Indian princesses*. When she first began to write, friends had asked to see her stories, but after it became evident that she worked with only one poor little pat-

tern, interest ceased, though the kindly wonder was that she had even that.

After fifty, which was the age she had always set for a turning point in the lives of her characters, she often sighed as she laid away a returned manuscript, admitting to herself in the same breath that she should have been almost sorry not to have added it to the pile. But it was such a pity that no else should enjoy her depicted golden visions and elevating society, which was educational, as well as moral; for she made a practice of putting frequent foreign phrases, which she found in the dictionary, into the mouths of her characters. Well, she would do all she saw to do, and no resentment should ever find lodgment with her, though she would have loved so dearly to see some of her patient work actually in print.

When Miss Pendleton began writing, her house had been in the country, but a town had quietly and relentlessly grown up around her and she found herself at fifty-five in the fashionable part of it, her old house an eyesore among the fine new buildings. All this came home to her one day when she was notified to pay her share of an enormous bill for street work. She infinitely preferred the grassy path that the fine new street covered up, but there was no alternative, and when she went to the old friend who had been her legal adviser for all the years since her father's death, she was pitifully shaken to find that it would take nearly her worldly all to cover the amount.

"I thought I had more than that," she said, hopelessly.

"You've been draining your resources helping your old friends for years—for years, Miss Pendleton," said the old lawyer, with kindly intentioned reproof. "I've often warned you, but you would do it. If you had let others alone, you'd have had enough to live in style, yourself; as it is, I'm afraid they'll rout you out on some excuse, as you're in the fashionable part of town, and they won't want your old house there much longer."

Miss Pendleton returned home in a state of dreadful apprehension. She went straight to the trunk and had a long cry over it. Oh, why could she never sell a story!

Then she resolutely dried her eyes and got out a large package of envelopes. "I won't give up at the eleventh hour," she said, beginning to address them. An hour later she went to the postoffice and mailed a story to every publishing house she knew the name of. Then she returned home and began lovingly to clean about the already shining little house. Some way she wanted to touch it all over and rid herself of the dread that she might have to part with it.

Several days passed, and the dukes and kings and princes came clambering back through the postoffice window. Finally one only of the goodly company remained out. She calculated the afternoon this should be heard from and went to the office early, intending to call on an old friend on the way.

During the call her friend asked, "Are you selling many stories lately, Martha?"

"No," answered Miss Pendleton. She had heard this question and had given the answer for twenty-five years now.

"Sam was telling me this noon that there's a traveler fellow that belongs to one of your publishing houses down to the new hotel."

Miss Pendleton rose to go. At the office she received her last story and turned toward home with it, but she did not even reach the new street that had cost her so much, for the thought that had been in her mind since her friend's news took form and turned her toward the new hotel.

If Mr. Dick Travers saw anything queer in the little old woman who almost imperiously asked his attention, he gave no evidence, and when she requested him in a tone not to be denied to accompany her home, he went unquestioningly. Miss Pendleton spoke little till home was reached, then she took the young man in and gave him a chair by the trunk, which she opened,

displaying the piles of manuscript to him.

"Young man," she said, solemnly, "there's the work of twenty-five years. I've got a talent for writing, and try to make the most of it. I'm not ashamed of the results, either, though never—I confess it for the first time aloud—never have I seen one story of mine in print. I've sent stories to every publisher I know the name of, and never an acceptance. Your house is one I've sent to often, and it's been the politest; but now I've got to sell or lose my home, and I have begun to suspect that I haven't ever been told the real reason why I can't sell. Now, young man, there they are. Tell me what's wrong. Why ain't they published? Just make yourself comfortable and go at them and don't worry about getting back to the hotel for supper. You're to have supper with me here, and I must say that if I don't know how to publish, I do know how to cook as well as write," and she closed the door on the surprised young man and entered the kitchen.

It was a trying position for Mr. Dick Travers, for he could not treat the old lady with less honesty and courtesy than she had shown him, and he was easy going and kindly. After a few moments of whimsical bewilderment he began turning over the manuscript, reading here and there. Sometimes he smiled—oftener he sighed, for the patience of the old woman who had tirelessly wrought on her pattern and the hopeless gorgeousness and fantastic impossibilities of her conceptions were so pitiful. A heaviness came over him, and he looked away from them around the meager little room with its evidences of old-fashioned care. He had heard from a friend of his, who lived in one of the fine new houses on this street, about this little old author, who could never publish and never stop trying, and who would probably lose her property.

A pile of old copybooks in the corner of the trunk finally caught his eye and he took them up. They were not tied, nor were they so carefully written as the story manuscripts, but his attention was engaged and he turned the leaves, first curiously, then rapidly and eagerly. Finally he ran through the pile, and, selecting at random, read again with the same absorbed interest. Here were no florid names, no impossible happenings, no crude efforts at fine writing, but plain, exact records of happenings, all the quaint happenings of a village in its growth, and intimate knowledge of all the characters and their sayings, interpreted by a judgment as clear when it came to real life as it was clouded when it came to imagination. Pathetic, tragic, patient, humorous, and full of life under the surface, were the old copybooks.

Miss Pendleton finally opened the door. Her eyes filled with tears of gratification, the first they had ever known in connection with her stories, when she saw the absorption of the young man who literally represented success. She stood uncertain; his supper—the best her good skill could devise—was waiting and would spoil, and yet her stories were receiving the attention they so needed and merited. Her indecision was only momentary; he must be interrupted, and she advanced to his side.

"Pshaw, you are reading my old diary!" she exclaimed, painfully surprised.

He gathered the copybooks together and rose.

"Let me take these to finish looking over at my leisure, please," he said, eagerly.

"Why, they're only my old diary."

"But I will take great care of them."

"Come to supper," she said, briefly, trembling. Here he was all agog over her old diary that hadn't a thing in it but the village life for twenty-five years, and she could feel that not a thought of the stories was in his mind.

She helped him liberally to everything on the table and then spoke. "Young man," she said, "I've borne too many disappointments and hid 'em up from folks I knew laughed at my talent not to be able to stand another. I must have your honest opinion of

them stories. I must, and no delay." She quivered with anxiety.

Travers straightened himself. "Miss Pendleton," said he, gravely, "you shall have it. You know there are fashions in stories as in everything else. I should say, though your patience and industry deserve a rich reward, that the stories are a little out of the fashion preferred by fiction readers nowadays, and I think that is why they don't sell. Publishers don't buy to please themselves, you know, but to please their readers."

"But some of them were written twenty-five years ago. How about the fashions then?" she asked, suspiciously.

"Well," he answered, slowly, "I really don't know at just what period such stories were popular, but not since you've been writing, I believe."

There was a long silence which he would have liked to fill with consoling words, but he knew that the dim-eyed old authoress could not be helped by such means.

"It may seem strange to you," she said at length, "but I've never doubted a minute in my whole life that I should be a success some day. If I've got to get used to defeat, the Lord'll have to show me how, for I don't know, and in the face of everything I seem to feel success near even now, and to know that Martha Pendleton's life ain't been wasted."

Now Travers could speak. "I don't want to be too confident, but I, too, think something very good is in store for you," he said, earnestly.

When he returned to the hotel he carried the copybooks with him. Two days later he called of his own accord on Miss Pendleton. She was washing a speckless window. He held out his hand eagerly.

"Miss Pendleton," he said, "I congratulate you."

She looked surprised, but quickly dried her hand and laid it in his.

"Congratulate me? What for?"

"Will you sell your old diary to our firm? I promise you it shall be well edited and published in the best style."

Miss Pendleton sat down weakly.

"Why, I couldn't. It ain't a story—it's real life."

"That's just it. It's vivid and picturesque and just what our readers are wild about now."

"But I couldn't."

"Why?"

"All my old neighbors' names are in it."

"You can change them easily—that is, we will change them."

"But the incidents are true, and lots of it is just about me."

"Is there anyone living who could be hurt by your charitable records, and are you reluctant to give your good, plain example to help others?"

This was a convincing argument and she could not withhold her final consent, though amazement made necessary many explanations. In due time Miss Pendleton found herself the proclaimed author of the most interesting book of the year. Her bank account grew, to her, stupendous; her house became a carefully preserved landmark, and she was treated with the reverence she had always felt for her beloved nobility.

She often took up "The Diary of a Quiet Woman," by Martha Pendleton, and fingered and admired it, but never without a glance and a sigh toward the old trunk with its slighted treasures.

"The Lord's way ain't ours," she said to Travers. "It took me twenty-five years to find out that He and I wanted different things published."—Abbie Purdy Clark, in *Orange Judd Farmer*.

"Bliggins is one of those people who think they know it all."

"Never mind," answered Mr. Sirius Barker. "Pride goes before a fall. He has a daughter who will soon be through school. He will sit and listen to her graduation essay and feel like an ignoramus."

Willie—Those goldfish you sent home are fakes.

Slimson—How do you know?

Willie—Why, I took them out of the water and they turned brown in fifteen minutes.

The Purpose of Sleep.

One of the most important factors of good health, says the Neuropath, is a sufficient amount of regular sleep. During sleep, the brain and the nervous system recuperate themselves, and both will suffer accordingly if sleep is not indulged in. It is certainly not so easy to lay down general rules as to the exact duration of sleep. In grown-up people the need of sleep varies very much. It is influenced by the condition of the body. Several experienced physicians have, however, computed a table of average figures, and individual parties should try to train their personal needs for sleep accordingly. Of course, it should be well understood that the length of sleep should be computed according to the age of each individual.

We know that some repairs to an engine can be made when it is running, or to a stove when it is in use for cooking, but one cannot make as much or as thorough repair to them then as when they are not in use. Even so it is with the body. The material of it is all the time wearing out and being discarded and replaced by new. Some of such change to the end of repairing it can go on when the body is in the more active state of day, when its energies are most fully called into play by work; but more of it can be done when the current is turned off or the fire burns low as in sleep. When we wake, the energies, or agents of energy, in the body which have been most largely turned to the work of repair during sleep are turned more largely to constructive action of the body, in the outer relations of it. Certain inorganic elements of the body bear to it the same relation that workmen do to a house that is building or to a business establishment. As we know that too sudden change in a force of men in a business (either in their personnel or in the work to which they are directed) cannot take place without loss, by reason of inefficient application of power or undue destructiveness or waste of material by reason of change of form without forwarding the general purpose of the structure in which it is designed to be a part—so, too, sudden waking and activity are not conducive to the welfare, or health, strength and beauty of the body, because it necessitates and evidences too sudden a change in application of the energies of the body.

Why Distasteful Food Is Unwholesome.

Some remarkable experiments to show the comparative digestibility of different foods have recently been conducted by Professor Pawlow upon dogs. These experiments are described by Dr. Romme in *La Revue* for August:

The gullet of the animal was cut in sections and fixed to the neck, so that when it ate the food merely fell to the ground, and the stomach was divided into two parts, one where no food was allowed to penetrate, the other into which was put the food necessary to keep the dog alive.

The results of the experiments proved that the mere offering to the dog of food which he liked caused an abundant secretion of gastric juice, although, of course, nothing had entered the stomach. If he were given a dainty—not merely food which he liked—the flow of gastric juice was much more abundant, that is, food taken without appetite will fall into a stomach without any gastric juices ready for it. The work of digestion was formerly supposed to go on all right if only you could get the food to the stomach. The Pawlow experiments show that it is either not digested at all or very badly digested.

Again, the brain transmits its orders to the stomach by means of two pneumogastric nerves. Professor Pawlow cut these nerves on a specially "prepared" dog. Then he gave the dog some raw meat, which again, of course, did not reach the stomach; but no drop of gastric juice was secreted. No method of mechanical excitement produced any juice. And if, unknown to the dog, without arousing in him the

idea of food, bread or cooked white of egg were introduced into the stomach, they remained hours without causing the least secretion of gastric juice. But after administering extract of meat or milk first the secretion was provoked.

In short, as a rule, with some exceptions, the food that does one good is that which one wants, and which the body can take up and use, not merely that which chemistry shows to contain the most of certain elements.

For Physical Perfection.

To remove wrinkles: Don't worry. Be sunshiny.

If scars are rubbed nightly with olive oil they may be greatly lessened in the course of time.

A few drops of alcohol in the bath will prove beneficial to the complexion. The action of cream and cosmetics differs greatly on various skins; in some cases it causes an abnormal growth of hair.

For increasing the growth of the hair sage tea may be applied to the roots of the hair daily with a sponge. Make the tea just strong enough to allow the bottom of a china teacup to be seen through it.

The use of strong perfumes should be avoided. A delicate odor of orris root, sandalwood or violet is far preferable to the numerous perfumes that are so manifestly compounded of musk.

The influence which indigestion, caused by errors in diet, exercises upon the complexion is universally appreciated. The flushing of the cheeks after a heavy meal or after eating some indigestible food, the appearance of cutaneous affections after partaking of sea fish, shell fish (such as oysters which are not fresh), crabs, smoked and preserved meats, salted and fermented cheese, certain acid fruits, berries, nuts, almonds, truffles, sweets, pastry, etc., all go to show that a proper alimentary regimen is of great importance to all who desire a good complexion. One must make a study of their own susceptibilities and abstain from the use of all substances found harmful to them. A certain consolation lies in the fact that individual susceptibilities become modified with age.

Washing as an Art.

Washing is an art, simple when you understand it.

Dissolved soap is a necessity, and is made by finely shredding a quarter of a pound of yellow soap into one quart of water, and boiling it till dissolved. A quantity can be made at one time and kept for use when required. When washing flannel and woolen goods never rub or twist them. Squeeze them about in a tepid lather, to which (for white flannels) a little ammonia is added. Wash thoroughly on both sides, rinse carefully, shake and dry in the air, not in the sun. Iron when nearly dry with a cool iron.

White silk blouses, ties and handkerchiefs are all washed in the same way. First steep them in cool water, with a little borax added, wash in a lather of warm water and dissolved soap, rinse well, pass through slightly blue water, fold in a clean cloth, pass through the wringer and iron on the wrong side when nearly dry with a cool iron. A little menthalated spirit added to the last rinsing water gives a desirable gloss. A dessert spoonful to a pint of water is ample. For colored silk, do not steep it in borax water or pass it through blue water. If you fear the color will run, steep it in salt and water for a short time, but be careful to rinse all the salt out before washing. —London Express.

"Hello, Starveling! How is literature?"

"First rate."

"Writing anything now?"

"Yes, a book."

"What on?"

"An empty stomach, principally. You couldn't lend me the price of a dinner, could you?"

DOMESTIC ECONOMY.

Wholesome Eatables.

DELICIOUS BAKED APPLES.—Bake sweet apples and pour over them sweet cream, flavored with lemon, vanilla or nutmeg. Sugar the cream to taste.

JELLY CAKE FRITTERS.—Cut slices of sponge or plain cake in squares or diamonds. Fry brown in butter. Dip hastily in boiling milk. Lay on a hot dish, and put a spoonful of strawberry jam or peach marmalade on each piece. Rich cake will not do.

BUTTERMILK PUDDING.—Two eggs, one-half cup of butter, three cups buttermilk, one cup sugar, one teaspoonful soda, three teaspoonfuls flour. Stir the flour in lightly, and pour in a well-buttered dish. Bake one hour. It can be turned out in shape. Bake in crust, if wished.

PICKLED CORN (for winter use).—Cut the green corn from the ear and pack in a stone jar in the proportion of one pint of salt to two quarts of corn, until the jar is full; then put a weight on top and cover closely. As wanted for use, soak out the salt with fresh water, pouring on boiling water the first time to seal up the milk in the corn, and then using cold; when freshened cook same as green corn.

FRIED APPLES.—Take smooth-skinned, fair apples, wash and wipe them; slice in round slices; and fry in hot pork drippings or sausage gravy. Serve with sausage or steak, keeping the slices as perfect as possible. Or, take mellow, tart apples, peel, core and slice, or core whole and slice. Put in a sauce pan with a lump of butter, and cook until pulp. Serve hot, allowing each person to sweeten to taste.

TO PREPARE FRUIT FOR CHILDREN.—Put plums or currants, sliced apples, gooseberries, or any other fruit into a stone jar, and sprinkle among them as much sugar as necessary. Pour in one cupful of water to prevent the fruit burning, and put in a moderately hot oven. Slices of bread may be put in alternately with layers of the fruit, and eaten with the sauce. Cook until thoroughly done. This will be found palatable and wholesome.

CRANBERRY SAUCE.—Wash and pick over one quart of cranberries, and put in a porcelain kettle or a bright saucepan. Spread two cupfuls of sugar over them; pour in one small cup of cold water. Cover, and simmer at the back of the stove one-half hour. Never stir until taken from the stove. Cranberries burn easily, and should not be kept in a hot place. Always put in the sugar before cooking cranberries. Graduate the sugar according to the required richness.

CHICKEN TAMALES.—To make chicken tamales, boil two pounds of corn and a handful of lime in water enough to cover, until the skins of the corn are loosened; then wash the lime from the corn, and grind the latter very fine. Boil a large chicken (or a little more than three pounds of beef) and mix the resulting liquid with the ground corn, adding a scanty pound of firm lard, and salt to taste. Having boiled a pound of red peppers until soft, remove the skins and seeds and grind the peppers fine; add three or four pieces of garlic (chopped), a small quantity of sliced tomato, and half a pound of ground chili. Mix this preparation with the chicken (or beef); then fry for a few minutes, boil for a very short time, and add salt to taste. Spread wet corn-husks with the prepared cornmeal, put in the chicken mixture and then boiled eggs, olives, raisins and cucumber, if desired. Then put on another corn-husk spread with meal, tie up, and boil for from three-quarters of an hour to an hour in a gallon of water. When all are half done, turn the top ones over. The above directions are calculated to make a dozen tamales.

About Pickles and Vinegar.

Jars that pickles are kept in should never have held any grease.

Cider vinegar is preferable for pickles. Other vinegars frequently

soften them. Dilute with water if too strong.

Pickles put up in cans and sealed hot are certain to keep. Pickles should never be allowed to freeze.

Boil pickles in porcelain-lined or stone utensils; not metal.

A few roots of horse radish put in will keep pickles already made. Horse radish sliced fresh into pickles that have scummed will carry the scum to the bottom with them, leaving the vinegar clear. And one-half bushel of grape leaves added to one barrel of pickles in brine will keep them sound and firm.

Mustard seed added to vinegar will prevent the formation of mold. A little bag of ground mustard laid in the top of the pickle jar will prevent un-boiled vinegar on pickles from becoming moldy.

A cluster or two of green grapes added to pickles will preserve strength of the vinegar.

Pickles should be stirred occasionally, soft ones removed, vinegar scalded and turned back.

Household Hints.

Earthen crocks or porcelain-lined kettles are the best in which to cook all kinds of fruits, preserves, jellies, marmalades, jams, etc.

Water boiled in a new crock several times will harden the glaze. Put in cold and let it come to a boiling point gradually.

By putting a little cooking soda in with rhubarb or gooseberries while cooking sugar will be saved.

Fruits, if overripe, should be cooked but little, and taken from the fire the moment they are done. A trifle underdone is better than cooked too much. All green or unripe fruits are improved by starting them in cold water, and cooking or simmering slowly without stirring for a long time. The long, slow cooking makes the fruit taste sweeter and riper.

If you will remove the table linen from the line when it is just damp enough to fold, you will find it much easier to iron, and it will bring out the pattern with a most beautiful satin finish.

When a glove begins to rip, immediately turn it wrong side out and sew the ripped seam on this side. The result will be neater and stronger. If the kid proves too tender, put a bit of silk or a piece of kid from an old glove under the break and fasten it as neatly as possible as a sort of reinforcement. An ingenious lady buttonholes the edges of a rent in a glove and then overhands the buttonholed edges together through the stitches. Her gloves are always neat and last longer than do those of most people.

One of those "healers" who was in Georgia some time ago was approached by a man with the rheumatism and a gold-headed cane.

"Drop the cane," said the healer, "and depart in peace."

"Never!" exclaimed the man; "that cane cost me \$12."

Jack—Yes, I had a little balance in bank, but I became engaged two months ago, and now—

Ned—Ah! love makes the world go 'round.

Jack—Yes, but I didn't think it would go 'round so fast as to cause me to lose my balance.

"Doctor," said the wide-eyed young man, "my wife is a kleptomaniac. Do you think you can do anything for her?"

"Well, we might try vaccination," replied the young doctor. "You know that keeps people from taking things."

She—You say you couldn't drink the coffee at the hotel. I suppose you threw it away.

Boarder—No; I used it in my fountain pen.

Daughter—Which is correct, papa, Miss Brown married Mr. Smith or Mr. Smith married Miss Brown?

Papa—That depends, my child. Had he the money or had she?—Judge.

S. F. Market Report.

The Markets in General.

SAN FRANCISCO, Nov. 12, 1902.

TRANSPORTATION.—Transportation is the life of trade. The threat of a strike of switchmen on eighteen railroads, at Chicago, was sufficient to affect certain market prices in New York, one day this week. The reason is that prices of produce depend somewhat on ability to deliver the goods at certain dates, and the railroads of the country are choked with traffic and hindered by lack of cars. There are said to be 1,500,000 railroad freight cars and 40,000 engines in use in this country, yet the demands of traffic call for 50,000 more cars than exist, and it is said that the situation is likely to get worse rather than better as the cold weather comes on.

Reports received from locomotive and car works throughout the country show that there are sufficient orders now in hand to keep them running day and night for the next six months. The railroads stand ready to order many thousands of freight cars and many hundreds of engines, but these orders if placed could not be executed within a year. Wm. Bixby, vice-president of the American Foundry Co., makes the statement that the output of cars this year will be 6500 a month as compared with 5500 last year, and still his company is unable to meet the demand. Yet the equipment of railroads has increased four-fold since 1894.

GRAINS.—Wheat growers generally in the United States are just beginning to feel Canadian competition. The "impassable wastes of snow" in Canada and the "American Desert" both are myths which are disappearing before the march of civilization. Canada is habitable to its most extreme northerly limit. There is an area north of the United States line, suitable for wheat growing, larger than the States of Iowa, Minnesota, the Dakotas and Montana combined, which is rapidly settling up; and Manitoba wheat, which is hard and fine-grained, successfully competes with No. 1 United States product.

During the week there has been some sales for Australia, two shiploads being reported at New York; and large interior shipping business has been reported at Duluth and Chicago, which was not supported by the speculative market. The sale of 200,000 bushels of North Dakota wheat for the Pacific coast was reported. The Grain Commissioner of the State of Washington reports four-fifths of the current crop already sold. It is the earliest selling known in that State.

The visible supply of grain to date is:

	Bushels.
Wheat.....	30,606,000
Corn.....	7,822,000
Oats.....	8,438,000
Rye.....	1,272,000
Barley.....	3,520,000

The following tables show the opinions of speculators in the principal wheat and corn markets of this country:

CHICAGO WHEAT FUTURES.

	Nov.— Op. Cl.	Dec.— Op. Cl.	May.— Op. Cl.
Wednesday.....	@70½	71½@71¾	73½@73¾
Thursday.....	@70½	71½@71¾	73½@73¾
Friday.....	@70½	71½@71¾	73½@73¾
Saturday.....	@70½	71½@71¾	73½@73¾
Monday.....	@70½	71½@71¾	73½@73¾
Tuesday.....	@70½	71½@71¾	73½@73¾

CHICAGO CORN FUTURES.

	Nov.— Op. Cl.	Dec.— Op. Cl.	May.— Op. Cl.
Wednesday.....	53½@53¾	51½@51¾	43½@42
Thursday.....	53½@53¾	51½@51¾	41¾@42
Friday.....	@53½	50½@51	42 @42½
Saturday.....	53½@53¾	51 @50½	42½@42
Monday.....	@53½	50½@51¼	42 @42½
Tuesday.....	@53½	50½@51	41¾@41¾

FLOUR.—Options have been obtained by Messrs. Thompson of the Centennial Mills of Seattle and Wilcox of the Portland Flour Mills on all the large flouring mills in Washington, Oregon and California for the purpose of consolidating them into one corporation to adequately handle the flour trade of the coast and Orient. The corporation is to be capitalized for \$20,000,000 and the financial details are now being arranged in New York City.

BEANS.—Among the sales of beans reported this week are Vickers of the Santa Clara ranch, Oxnard, 3500 sacks, and Doman Bros., 8000 sacks, both to M. L. Wolff.

Ventura's output of Limas is close to 510,000 sacks. Last year's crop was about 550,000 sacks.

HOPS.—Reports during the week have persistently been that there has been heavy buying in Oregon and Washington at rising quotations, reaching 26c, and by the time this report reaches the

reader the crops of those States will probably have been practically all bought up, reports the first of this week being that but 20,000 bales of Oregon and 9000 of Washington were then in producers' hands.

ALFALFA SEED.—Advices from the Tulare lake region are that the yield of alfalfa seed there this year is comparatively small. The influence of local dealers in that section has been exerted bearishly. Wood, Curtis & Co. have been offering 8c per pound and have been buying all they could at that price.

PRUNES.—In prunes, a San Jose packer estimates the export of this year at 60,000,000 pounds, the largest in the history of prune raising in this country. The European market calls for large sizes this year. Great activity in packing and shipping is reported both at San Jose and at Salem, Or., with a firm feeling on prices, which will probably soon advance. The tone of the Oregon market is said to have never been stronger than now. Thirty carloads were sold the past week to French importers who have been on this coast for some time buying. The stock of prunes on hand at Chico is said to be in excess of that of last year. The output is put at 200 tons prunes, with two cars dried pears and five to eight of peaches.

Elsinore fruit growers are getting 5 cents for apricots and 3 cents for prunes at Los Angeles.

San Jose Mercury: "Prunes that are represented as the Santa Clara product but were grown elsewhere are being sold on the New York market at a 2-cent sack basis, and at the same time San Jose buyers are paying 2½ cents per pound for this season's crop of prunes produced in this valley. The same thing is happening in the Texas market. The effect of this is disastrous to the prune industry in this county. A prominent broker showed the reporter letters from New York and Austin, Texas, houses stating that they could not pay more than a 2-cent basis for the fruit he offered them, as they were buying Santa Clara valley prunes from San Jose packers on a 2-cent basis. The names of the packers and the amounts bought from them were given."

RAISINS.—Seeders are "snowed under" with orders for seeded raisins, and some orders are reported to have been turned down. The ½ cent raise of prices was made by the U. R. G. Association in pursuance of their announcement that they would so do, the announcement having been the chief inducement causing the cleanup sale. There is a good demand for carload lots of loose. Raisins are no longer of much market interest to most producers.

DRIED FRUITS.—A sharp demand for immediate shipment has characterized the dried fruit market the past week, in the effort to fill up Eastern stocks for holiday trade. An advance in prices will probably be made by California dealers in a week or ten days, particularly in prunes.

HONEY.—Over forty tons of honey were shipped out of the Mason valley in Mono county recently, the sale being reported at 11 cents for the comb honey and 5 cents for the extracted. Reports from San Diego are that the best honey in the market commands 5½ cents, with an upward tendency due to short crop.

APPLES.—The American Agriculturist estimates the apple crop of the United States for 1902 at 43,000,000 barrels, about 60% larger than last year.

Hundreds of thousands of bushels are reported by the Fruit Growers' Association of New York as rotting in the field, with the evaporator industry at a standstill in that State for lack of coal, which the resumption of work in the mines has so far done nothing to end. East of the Rocky mountains the apple crop is good in spots, in the main best in the extreme East.

G. W. Sill, Watsonville agent for Balfour, Guthrie & Co., puts the total apple export from that section (including San Jose) this year at 250 car loads, mostly to England and Scotland.

CITRUS FRUITS.—Steinhardt & Kelly of New York have made arrangements with the Agricultural Department of Costa Rica to introduce oranges from that country into the New York market. The first shipment will arrive in a few days.

Redlands Citrograph: "The total shipments of oranges from southern California for the year ending October 31 was 15,716 cars, and the shipment of lemons was 1663 cars, making a total shipment of citrus fruits of 17,379 cars. The coming year's crop will be about 19,000 cars."

Florida orange growers are asking \$1.50 to \$2 a box, which buyers are not meeting, and the result is a stand-off, which leads to consigning. Quality and sizes are good.

Many Mexican men of means are going into orange growing and it is bound to be a growing industry.

The Southern Pacific Railway Co. has

also lowered its rate on lemons to \$1, at which lemon growers are greatly rejoiced. The Santa Fe has offered such growers an arrangement by which they may cold storage their fruit in Chicago, two carloads per month, awaiting favorable market conditions. The growers are to charge a price which involves a slight profit, the warehouse company to charge 10c a box per month for handling, and the railroad \$1 for handling. The residue from the sale price, after meeting these charges, is to be divided equally between the three parties.

Redlands Facts: "Orange packers and shippers in southern California claim to have reliable information that the output of central and northern California oranges before December 10 will be so large that big prices for Redlands fruit need not be expected."

San Bernardino Sun: "Just previous to the ending of the fruit shipments to the East a few days ago the Southern California Fruit Exchange sold a car of Valencias in New York for \$2757. Fancy fruit, ninety-six sizes, sold for \$15.50 per box. This beats anything in the way of orange sales ever made in the East, excepting where fruit was sold to raise charity funds. On the same day the Exchange sold lemons at \$5 30 per box."

An attempt, rather unsupported by cash offerings, to get an option or bond corner on the orange groves in and around Redlands, met with much success. A gigantic corporation was to be created to own them, the stocks and bonds of which were to be sold in the East.

Movements of citrus fruits in California north of the Tehachapl. to November 1, were as follows: From Porterville—Porterville Citrus Ass. (Excg.), 3 cars oranges, 1 car lemons; Zante Citrus Ass. (Excg.), 1 car oranges; Earl Fruit Co., 7 cars oranges, 1 car lemons; Fay Fruit Co., 1 car oranges. From Lemon Cove—Kaweah Lemon Co. (Excg.), 3 cars lemons. From Exeter—Earl Fruit Co., 1 car oranges. From Lindsay—Earl Fruit Co., 2 cars lemons.

Southern California packers say there will be fifty cars out of Butte county before December 10. There will probably be more by considerable. Reports from trade sources are that growers there are much better and more extensively organized for marketing purposes than formerly, but many growers at Palermo are selling in job lots.

NUTS.—A good deal of the nut crop at Lodi and Acampo is still in the hands of growers.

Franklin McVey, Chicago wholesale grocer, bought sixteen tons of almonds from Captain E. W. Edson's Bella-Louise ranch, near Lancaster, and S. W. Neal of Little Rock, also near Lancaster, shipped 4500 pounds to Chicago. The walnut crop of the State will have moved almost entirely out of the hands of growers by December 1.

WINE.—Conditions are reported good in British Columbia this year for the sale of California wines there—good crops and prosperity, and a favorable feeling toward California wines when thoroughly reliable. The Italian-Swiss winery in Sonoma county has made 1,500,000 gallons of wine this season, and already shipped nearly forty carloads of it to San Francisco.

OLIVES.—Several orchards of olives near Fallbrook have been bought by Vernon Campbell at prices ranging from \$57.50 to \$66 per ton, it is locally reported.

At Lakeland, near Elsinore, owned by C. H. Albers of St. Louis, where sixty-acres are planted to olives alone, a mill is being put in with a capacity of 350 gallons a day, large enough to not only extract the oil from the Lakeland fruit, but to handle the crops of other growers in the valley. Lakeland alone will have sixty tons of fruit to crush.

Produce Market.

GRAIN RECEIPTS AND EXPORTS.

During the month of October the receipts of wheat at this port, including cargoes loaded at Port Costa for export, were 537,732 cents, all California but 2646 cents from Oregon. The receipts in October, 1901, were 1,096,761 cents, and 659,612 cents for the same month in 1900.

Receipts of flour in barrels:

	Calif.— fornia.	Oregon, Etc.	Total.
Oct.	151,602	21,814	173,416
1901	128,059	20,025	148,084
Decrease..	23,543	1,789	25,332

In October, 1900, the total receipts were 147,802 barrels and 100,986 in 1899.

The receipts of barley at this port in October, including quantities loaded at Port Costa for export, were 514,802 cents, all California, against 1,269,222 cen-

tals in October, 1901, and 400,542 cents for the same month in 1900.

Receipts of wine and brandy in gallons:

	Wine.	Brandy.
1902.....	1,219,800	83,800
1901.....	1,081,680	41,900
Increase.....	138,120	41,900

In October, 1900, the receipts were 959,175 gallons wine and 21,133 gallons brandy.

The receipts of oats at this port in October were 98,728 cents, 84,949 being California and 13,779 from Oregon and Washington. In October, 1901, the total receipts were 151,435 cents.

October exports of wheat from San Francisco were as follows:

To—	Cents.	Values.
Great Britain.....	335,396	\$406,665
South Africa.....	117,033	144,254
Hawaiian Islands....	2,009	2,686
Central America.....	492	647
Elsewhere.....	81	112

Totals.....	455,011	\$554,364
October, 1901.....	944,103	933,811

Decrease..... 489,092 \$379,447

Last month 10 cargoes, or part cargoes, were cleared for Great Britain and 2 for South Africa. They were cleared by the following named firms: Eppinger & Co., 2; G. W. McNear, 3; Balfour, Guthrie & Co., 4; A. B. Costigan & Co., 1; Cutler & Moseley, 1; E. C. Evans, 1. In October, 1901, there were 16 clearances. The exports in October, 1900, were 626,024 cents, against 225,185 cents for the same month in 1899 and 14,114 cents in 1898. The average export price last month was \$1.21½ per cental, against 99c, nearly, in October, 1901.

Arrivals of other produce during the week have been:

WHEAT.

The speculative market at this point for the past week has been a trifle fluctuating at ruling prices, several cents lower than the range covered by previous report; the cash market steady at same figures as during previous period, but with an occasional failure of buyers and sellers to meet on prices, and consequently a lower tone. Some 35,560 cents of wheat arrived from Oregon. The speculative history of the week covered is given in the following table:

SAN FRANCISCO WHEAT FUTURES.

	Dec.— Opened.	Dec.— Closed.	May.— Opened.	May.— Closed.
Wednesday.....	\$1 30 @1 30½	\$1 32 @1 33½		
Thursday.....	1 30½@1 30¾	1 32½@1 33¾		
Friday.....	1 28½@1 27¾	1 32 @1 30¾		
Saturday.....	1 29 @1 29¼	1 31½@1 32		
Monday.....	1 29¼@1 30¼	1 32 @1 33¾		
Tuesday.....	1 30¼@1 31¼	1 33¾@1 34½		

The cash market has remained and is now steady at \$1.32½@1.35 for shipping and \$1 37½@1.40 for milling.

PRICES OF FUTURES.

Wednesday, at the forenoon session of the Merchants' Exchange, December wheat sold at \$1.32@1.32½; May at \$1.34½@1.34¾.

FLOUR.

Shipments recently have been large, particularly to the Orient.

California, Family Extras	4 00 @ 4 15
Bakers' Extras	3 90 @ 4 00
Oregon and Washington, Family....	@ 3 25
Bakers'	3 40 @ 3 65

- BARLEY

Has been more active, but at a somewhat lower range of speculative figures than during the previous reported period, with the cash market steady at the prices named below. Receipts have been light.

Feed, fair to good.....	1 15 @1 18½
Brewing and shipping.....	1 22½@1 25
Chevalier, fair to choice.....	1 50 @1 60

BARLEY FUTURES.

	Dec.— Opened.	Dec.— Closed.	May.— Opened.	May.— Closed.
Wednesday.....	\$1 19½@1 20½	\$1 23 @1 23½		
Thursday.....	1 20 @1 20	1 23 @1 23		
Friday.....	1 19 @1 17½	1 22½@1 20¾		
Saturday.....	1 18½@1 18½	1 20¾@1 21¼		
Monday.....	1 17½@1 18½	1 21½@1 21¾		
Tuesday.....	1 18½@1 18½	1 22½@1 23		

OATS.

Receipts of oats have been liberal, including 21,575 cents from Oregon and 9470 from Washington. Top quotations on white declined 5 cents.

White Oats.....	1 25 @1 30
Black, for feed.....	1 10 @1 20
Black, for seed.....	1 27½@1 35
Red, common to choice.....	1 12½@1 23½
Red, fancy.....	1 25 @1 30

CORN.

Receipt of a car of Western States corn and report of others on the way here, during the past week, has broken prices on California stock for both yellow and white. Egyptian corn is reported in larger supply this year than heretofore,

and going in various ways at various prices.

Large White, good to choice.....	1 45	@ 55
Large Yellow.....	1 35	@ 45
Small Yellow.....	—	@ 50
Egyptian, Brown.....	1 10	@ 20
Egyptian, White.....	1 25	@ 40
Western, sacked, yellow.....	—	@ 30
Western, sacked, white.....	—	@ 40

RYE.

Good to choice.....	1 05	@ 10
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BUCKWHEAT.

Good to choice.....	nominal	@ 75
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BEANS.

Producers and the market are having the usual annual experience of shaded prices for rain-damaged beans, which has a tendency to unsettle and weaken the market somewhat. Well-cleaned, uniform-grade, choice lots might well be kept off the market for the present.

Prices to producers for round and carload lots on wharf, city:

Pea, 100 lbs.....	3 00	@ 25
Small Whites.....	3 15	@ 20
Lady Washington.....	2 75	@ 30
Pinks.....	2 40	@ 55
Bayos.....	2 80	@ 30
Red Kidney.....	4 00	—
Limas.....	4 25	@ 35
Black-eye Beans.....	3 85	@ 40
Garbanzos, large.....	2 25	@ 50

PEAS.

Dealers in seeds report the market is practically bare of these goods. Some millers report the supply well bought up some time ago, and still being held on speculation.

Green Peas, California.....	1 25	@ 50
Niles Peas.....	1 65	@ 75

HOPS.

California, good to choice new.....	22 1/4	@ 75
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SEEDS.

Dealers claim that alfalfa seed has already been closely bought, and that the supply is short, prices rising and market firm. Some buying notes are given elsewhere. Largest dealers say reliable quotations in many lines are impossible to make, on account of uncertain relations between demand and supplies on hand.

Alfalfa, Cal.....	10 50	@ 11 00
Canary, in original packages.....	4 1/4	@ 4 1/4
Rape.....	2	@ 2 1/4
Hemp.....	—	@ 4

HONEY AND BEESWAX.

White is reported scarce; light amber honey in fair supply.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis for comb:

Extracted, White Liquid.....	6	@ 6 1/4
Extracted, Light Amber.....	4 1/2	@ 5 1/2
Extracted, Amber.....	3 1/4	@ 4
White Comb, 1b frames.....	10 1/4	@ 11
Light Amber.....	9	@ 10
Dark Comb.....	5	@ 5
Beeswax, Good to choice, light, # lb.....	26	@ 27
Strictly fancy light.....	29	@ —

HAY AND STRAW.

Dealers are drawing from their warehouse stocks. Some slight shipments are being made to the Hawaiian islands and coastwise. The market is firm at quotations.

Choice Wheat Hay.....	14 00	@ 14 50
Good Wheat Hay.....	12 50	@ 13 50
Other grades same.....	10 00	@ 12 00
Wheat and Oat.....	10 00	@ 13 00
Tame Oat.....	10 00	@ 12 50
Second Quality Oat.....	7 50	@ 9 50
Barley and Oat.....	7 50	@ 10 00
Alfalfa.....	9 00	@ 10 50
Straw, # bale.....	40	@ 57 1/2

FEEDSTUFFS.

Millers quote to wholesale dealers:

Bran, # ton.....	21 00	@ 22 00
Middlings.....	25 00	@ 26 50
Shorts, California.....	22 00	@ 23 00
Barley, Rolled.....	25 00	@ 25 50
Cornmeal, coarse feed.....	31 00	@ 31 50
Cracked Corn.....	31 50	@ 32 00

LIVE STOCK AND MEATS.

No changes have been noted in the wholesale price of meats, but retail prices in the city have been raised by the Butchers' Protective Association. The influence of Miller & Lux in this market is credited with making it practically independent of conditions in Eastern markets and of keeping down the wholesale price of meats here, which, however, it appears does not always advantage consumers.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, # lb.....	6 1/4	@ 7
Beef, cows.....	5	@ 6
Veal, large, # lb.....	7	@ 8
Veal, small, # lb.....	8 1/2	@ 9 1/2
Mutton—ewes, 7@8c; wethers.....	7 1/2	@ 8 1/2
Lamb, spring, # lb.....	9	@ 9 1/2

Dealers are quoting prices to producers for first

quality live stock, less 50% shrinkage on cattle, as follows:

Cattle—Steers.....	8 1/4	@ 9
Cows and Heifers.....	7	@ 7 1/4
Thin Cows.....	4	@ 5
Calves, large.....	4	@ 5 1/2
Calves, light (gross weight).....	5 1/4	@ 6
Sheep—Ewes (gross weight).....	3 1/4	@ 3 1/4
Wethers.....	3 1/4	@ 4
Lambs—Suckling, # lb (live weight).....	3 1/4	@ 4 1/4
Hogs, dressed.....	8 1/4	@ 9 1/4
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2	@ 6 1/2
Hogs, small, fat.....	6	@ 6 1/4
Hogs, large, hard, over 250 lbs.....	6 1/4	@ 6 1/4
Hogs, country dressed.....	7 1/4	@ 8

POULTRY.

Supplies have been fair, market generally steady and prices quite well sustained. Fancy lots have brought extra prices as usual—a fact which is worth the while of producers to note in connection with the holiday season now close at hand.

Turkeys, alive, choice young.....	15	@ 17
Turkeys, alive, Hens, # lb.....	14	@ 16
Turkeys, alive, Gobblers, # lb.....	14	@ 16
Turkeys, dressed.....	18	@ 20
Hens, California, # dozen.....	4 50	@ 5 50
Roosters, old.....	4 50	@ 5 00
Roosters, young (full-grown).....	5 00	@ 5 50
Fryers.....	4 00	@ 5 00
Broilers, large.....	4 00	@ 5 00
Broilers, small to medium.....	3 00	@ 3 50
Ducks, old, # dozen.....	3 00	@ 4 00
Ducks, young, # dozen.....	3 00	@ 3 50
Geese, # pair.....	1 50	@ 1 75
Goslings, # pair.....	1 75	@ 2 00
Pigeons, old, # dozen.....	1 12 1/2	@ 1 25
Pigeons, young.....	1 50	@ 1 75

BUTTER.

Butter has been in light supply, with prices advancing.

Commission merchants quote as returning for:		
Creamery, extras, # lb.....	32	@ 33
Creamery, firsts.....	29	@ 30
Dairy, select.....	27	@ 29
Dairy, firsts.....	24	@ 25
Dairy seconds.....	21	@ 23
Firkin, good to choice.....	25	@ 27
Mixed store.....	18	@ 20
Pickled Roll.....	24	@ 26

EGGS.

Ranch eggs have been so scarce as to be almost entirely out of market, and prices have reached 50@55c for fancy select and 40@47 1/2c for irregular; but the prices of common and store eggs have not been effected.

Commission merchants quote as returning for:		
California, select, large, white and fresh.....	50	@ 55
California, select, irregular color & size.....	45	@ 49
California, good to choice store.....	25	@ 30
Eastern.....	26	@ 27

CHEESE.

Commission merchants quote as returning for:		
California, fancy fat, new.....	15	@ 16
California, good to choice.....	14	@ 14 1/4
California, "Young Americas".....	15	@ 16

WOOL.

FALL.		
Humboldt and Mendocino.....	12	@ 15
Northern, free.....	10	@ 12
San Joaquin.....	8	@ 11
Lambs.....	8	@ 10
Middle County.....	9	@ 11

POTATOES.

Principal dealers for choice large lots on wharf, city, are paying:		
Burbanks, Salinas, # cental.....	1 00	@ 1 17 1/2
River Burbanks, good to select, # cental.....	25	@ 60
River Reds.....	40	@ 50
Sweet Potatoes, # cental.....	1 15	@ 1 35
Oregon.....	1 00	@ 1 10

VEGETABLES.

Commission merchants report realizing for:		
Beans, Lima, # lb.....	3 1/4	@ 4
Beans, String, # lb.....	2 1/4	@ 5
Cabbage, choice garden, # 100 lbs.....	50	@ 75
Cucumbers, # large box.....	75	@ —
Egg Plant, # large box.....	60	@ 75
Garlic, # lb.....	2 1/2	@ —
Onions, # cental.....	25	@ 60
Okra, Green, # box.....	40	@ 60
Peas, Sweet garden, # lb.....	4	@ 5
Peppers, Chile, # box.....	50	@ 65
Peppers, Bell, # box.....	50	@ 75
Summer Squash, Bay, # large box.....	1 75	@ —
Tomatoes, # large box.....	50	@ 75

The Fruit Market.

FRESH FRUITS.

The commission market in fruits and vegetables is well cleaned up, with a quite equal relation between present supply and demand.

Commission merchants are realizing for:		
Apples, fancy, # 4-tier box.....	1 25	@ 1 50
Apples, good to choice, # 50-lb. box.....	75	@ 1 00
Apples common to fair, # 50-lb. box.....	25	@ 50
Cranberries, Cape Cod, # barrel.....	9 00	@ 11 50
Cranberries, Coos Bay, # 60-lb. box.....	2 25	@ 2 50
Raspberries, # chest.....	5 50	@ 7 00
Grapes, Cornichon, # crate.....	65	@ 1 00
Grapes, Isabella, # crate.....	40	@ 75
Grapes, Black, # crate.....	50	@ 75
Grapes, Muscat, # crate.....	65	@ 85
Grapes, Seedless, # crate.....	85	@ —
Grapes, Tokay, # crate.....	60	@ 75
Grapes, Verdelis, # crate.....	50	@ 80
Pears, other kinds, # box.....	40	@ 1 50
Persimmons, # box or crate.....	50	@ 1 00
Plums, choice large, # box or crate.....	50	@ 65
Pomegranates, # small box.....	40	@ 65
Quinces, # box.....	35	@ 60

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Strawberries, Longworth, # chest.....	9 00	@ 11 00
Strawberries, Large, # chest.....	4 00	@ 5 00

DRIED FRUITS.

EVAPORATED OR BLEACHED.		
Apples, 50-lb boxes, rings, pressed, standard to choice.....	4 1/4	@ 6
Apricots, Moorpark.....	7	@ 10
Apricots, Royal, good to choice, # lb.....	5 1/4	@ 7
Apricots, Royal, fancy.....	7 1/4	@ 8
Figs, 10-lb. box.....	75	@ 1 15
Nectarines, # lb.....	4 1/4	@ 5 1/4
Peaches, unpeeled, choice.....	4 1/4	@ 5 1/4
Peaches, unpeeled, fancy.....	6	@ 7
Pears, halves, fancy.....	9 1/4	@ —
Pears, halves, choice.....	6	@ 6 1/4
Pears, halves, fair to good.....	4 1/4	@ —
Plums, Black, pitted.....	4 1/4	@ 5 1/4
Plums, Silver, good to fancy.....	4 1/4	@ 7
Prunes, in bags, 4 sizes, 2 1/2 @ 2 1/4; 40-50s, 5 @ 5 1/4; 50-60s, 3 1/4 @ 3 3/4; 60-70s, 3 @ 3 1/4; 70-80s, 2 1/4 @ 2 3/4; 80-90s, 2 @ 2 1/4; 90-100s, 1 1/4 @ 1 3/4.		
Figs, White, in bulk.....	6	@ 6 1/4
Figs, Black, in sacks, # lb.....	4 1/4	@ 5 1/4
Plums, unpitted, # lb.....	1 1/4	@ 2 1/4

CITRUS FRUITS.

Two carloads of oranges from the Tulare county section and two from southern California—La Panza and San Antonio—have appeared in this market, all well colored, almost perfectly yellow, and likely to prove sharp competitors to other stock. Arrivals are expected to be quite generous in quantity from now on. Auction is now not expected to open until the new year.

Oranges, Navel, fancy, # box.....	3 00	@ 4 00
Oranges, Seedlings.....	2 00	@ 2 50
Oranges, standard.....	—	@ —
Lemons—California, fancy, # box.....	2 75	@ 3 25
California, choice.....	2 00	@ 2 50
California, standard.....	1 00	@ 1 50
Limes, Mexican, # 1000.....	4 00	@ 4 50
Grape Fruit.....	2 00	@ 3 00

NUTS.

California Almonds, shelled.....	23	@ 26
California Almonds, paper shell, # lb.....	10 1/4	@ 11 1/4
California Almonds, soft shell.....	7 1/4	@ 9
California Almonds, hard shell.....	4 1/4	@ 5 1/4
Peanuts, California, fair to prime.....	4 1/4	@ 5 1/4
Peanuts, Eastern, hand-picked.....	6	@ 6 1/4
Walnuts, White, soft shell, # lb.....	10 1/4	@ 11 1/4
Walnuts, White, standard, # lb.....	9 1/4	@ 10

Produce Receipts.

Receipts from California Interior for week were:			
Wheat, centals.....	83,468	Straw, tons.....	6
Flour, # sacks.....	121,153	Onions, sacks.....	5,610
Barley, centals.....	83,256	Hay, tons.....	1,591
Oats, centals.....	7,891	Wood, bales.....	1,402
Corn, centals.....	1,465	Hops, bales.....	878
Rye, centals.....	2,045	Alfalfa, sacks.....	638
Beans, sacks.....	52,641	Pelts, bbls.....	7,079
Potatoes, sacks.....	41,401	Wine, gals.....	537,648

From Oregon:		
Oats.....	21,575	Wheat.....35,5
Flour.....	28,921	Potatoes.....

Flour.....	13,372	Potatoes ..	912
Oats.....	9,470	Flaxseed.....	1,879

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THE PUBLIC LANDS.

The Land Commissioner's Report.

The annual report of Binger Hermann, Commissioner of the General Land Office, shows that the public land disposed of by the Government during the year aggregated 19,488,535 acres, an increase of 3,925,739 acres over the previous year. Of the aggregate 1,757,793 acres were sold for cash; 17,614,792 acres were embraced in miscellaneous entries, and the remainder were Indian lands.

RECOMMENDATIONS.—Commissioner Hermann recommends a large appropriation specifically for surveys in Alaska; legislation regulating railroad rights of way granted under existing laws so that parties who have expended large sums of money for power plants, etc., shall be protected against new settlers, and a large appropriation to provide for an increased number of special agents to prevent timber depredations and to protect public lands from unlawful entry. The report also renews previous recommendations for compulsory attendance of witnesses in hearings before district Land Offices; for repeal of existing laws regarding timber on the unreserved public lands, and substitution thereof of a general law providing ample protection for the forests, and furnishing means by which monopolies, settlers and others may secure a sufficient supply of timber for their legitimate needs; legislation to protect game and fish in forest reserves; extension of the boundaries of Yellowstone National Park, and legislation giving the President general authority to set apart as national parks public land tracts having scientific or historic interest or containing springs of medicinal properties.

It is urged also that the law as to exchange of lands, embraced in forest reserves held by private owners, for public lands not in reservation, be changed so as to secure an approximation in value of the lands relinquished with those selected in lieu thereof. On October 1st last there were fifty-four forest reserves, embracing 60,175,165 acres, an increase of almost 14,000,000 acres since the last report.

FORESTRY.—During the fiscal year there were 1663 forest fires, which burned over 87,799 acres. The constantly decreasing area burned over is said to demonstrate the efficiency of the Government forestry service. The Commissioner says the withdrawal and proper policing of the forest lands of the Government during the year has shown the following result:

- 1.—The work has proved self-supporting.
- 2.—It has, in addition, brought in a revenue to the Government.
- 3.—Needed timber supplies have been placed within lawful reach of the public.

Timber depredations within the reserve limits have practically ceased.

A little over 50,000,000 acres of land were certified and patented to railways during the year under the land grants

made by Congress to aid in the construction of railroads. During the season the Interior Department allowed 1,197,000 sheep to enter eight of the reservations for specified periods, the grazing to be confined to specified areas, and 459,137 head of cattle and horses to graze in thirty-eight of the reservations.

Concerning reforestation, the report says: "Assuming that the reforestation of the denuded areas in the forest reserves, where sufficient moisture prevails to make the germination of seeds of the native trees possible, might be expected to result in good time, if the occurrence of devastating fires could be reduced to a minimum and the grazing of stock restrained within proper limits and reduced to a safe basis, the forest force has been required to make extra exertions to prevent damage by fire and to keep the office fully informed relative to the effects of stock grazing and to keep out stock not licensed to enter the reserves, and the evidences point to almost unvarying success."

"The forest trees are coming back, not only where there is a plentiful rain fall, and not a little hope is found in the fact that the native trees are reproducing themselves in the drier portions of the country where the fires are kept out and where grazing is restrained within a reasonable limit, and many a waste place is becoming a wilderness of verdure."

PATENTS AND VACANT LANDS.—The report shows that patents were issued for mineral lands as follows: Alaska, 402 acres; California, 6793 acres; Oregon, 650 acres; Washington, 542 acres; Arizona, 2656 acres. This is an increase except in the case of Arizona.

In California 11,677 acres of swamp lands were patented. Lands were selected by the State of California for school land indemnity and approved by the secretary as follows: San Francisco land district, 12,520 acres; Shasta; 13,088 acres; Independence, 6689 acres; Visalia, 6013 acres.

Following is the estimated quantity of vacant public lands in California: Area unappropriated and unreserved, 41,552,434 acres, of which all but 7,950,954 acres have been surveyed; area reserved, 16,033,270 acres; area appropriated, 42,384,216 acres. The Surveyor-General's reports show that 129 applications for mineral land surveys were made during the year; 55,115 acres of approved surveys were made and 76,837 acres of other surveys platted.

RAILROAD GRANTS.—In the matter of the adjustment of railroad land grants, Commissioner Hermann says: "Examination has been made of the grant by act of July 27, 1866, to the Southern Pacific Railroad Company, main line, between San Jose and Mojave, but further examination was not made for the reason that a large portion of the grant east of the latter place is overlapped by the grant by the same act to aid in the construction of the Atlantic & Pacific Railroad, and lands within this overlap were involved in the suit brought by the United States against the Southern Pacific Company, the grant to the Atlantic & Pacific Company having been declared forfeited to declare the title thereto in the United States, and the limits of the grant had not been established."

The Supreme Court has now rendered its decision in the case (183 U. S., 519), holding that the Government and railroad company are entitled to equal undivided moieties in all odd-numbered sections within the overlap. The lateral limits of the grant, by direction of the department, have been adjusted to the line of the road as constructed, and the railroad company called upon to designate which of the alternate odd-numbered sections—those numbered 1, 5, 9, 13, etc., or those numbered 3, 7, 11, 15, etc.—it will take as its moiety, and to furnish the department with a description of the lands it has sold the Court having declared that all such lands must be set off to the company and the title of the purchasers thereby perfected. The Government moiety of these lands will be restored to entry as early as possible after the company responds to said call.

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Monster Garden Map of States at the World's Fair.

Space has been allotted in the western part of the World's Fair grounds at St. Louis for a great garden map of the United States. The allotment was made upon the application of W. J. Spillman of the Government Department of Agriculture, expert in grasses and forage plants. The map will constitute a part of the exhibit of the Bureau of Plant Industry and will have a southern exposure well suited for the purpose. Two acres will be taken up with this map. The State lines will be marked by walks in cinders, red gravel or some other material. In each State reservation will be shown the economic plants produced in the State and for which the State is known. The corn of Kansas, the wheat of the Middle States, the cotton, tobacco and sugar cane of the Southern States, the orange and pineapple of Florida will all be shown. Those plants which do not grow in this latitude normally will be forced under glass in hot beds. Mr. Spillman says that two acres will be sufficient to carry out this plan, allowing an acre 200x400 feet. This would make the State of Illinois about 75 feet long.

With this map spread out on the southern slope in the place allotted, it would appear from the Agricultural Building Hill like a birdseye view of the United States, while the visitor walking on the paths would, so far as vegetation was concerned, be traveling through the country.

The outdoor exhibit will have a number of additional features which will make it the most remarkable agricultural exhibit ever made on earth. The outdoor exhibit is a novelty. It was tried in miniature at two former American expositions, but at those expositions it was confined to grasses and forage plants. The range of the present outdoor exhibit is shown by the following points which will be covered by it:

1. A cereal exhibit in which will be shown growing every species of wheat, oats, barley, rye, corn, emmer, spelt and Einkorn. As there are over 4000 varieties of wheat and some hundreds of corn, the extent of this exhibit may be judged.

2. Diseases of Field and Garden Crops: Plants will be shown afflicted with various diseases and one-half of the plants will be treated scientifically to show how the disease may be eliminated. Thus, potatoes will be inoculated with blight and half the plants treated to kill the blight. Smutted oats will be shown under the same conditions.

3. Plant breeding or crossing of varieties will be shown by offering the parent plants and the hybrid growing between. Many varieties of hybrid wheats and of garden vegetables hybridized to produce strange varieties will be shown.

4. The treatment of sand dunes with

vegetation to bind the loose sand and prevent it from blowing under storm winds. The department has prepared binding grass which grows on the sand and makes the shifty dunes a solid soil. Dunes will be shown in the exhibit covered with vegetation.

5. The Rotation of Crops: An ideal farm covered with crops which follow in rotation in extensive farming will be shown. The rotation as produced in the best form is: First, corn; second, oats; third, clover and timothy. On an area of a few rods long this farm can easily be shown.

6. Growing crops for seed and methods and machinery in use on well equipped seed farms will be shown. Plants of living varieties will be used so that the gathering of seed may go on throughout the exposition.

7. Medicinal Plants: Dr. R. H. True, the expert in charge of this division, has prepared a large list of plants that grow normally in this latitude which will be shown alive and growing.

8. The tropical plants of the American island possessions will be shown outdoors in classes, as well as the primitive agricultural implements which the natives use in tilling the soil.

9. Test Crops: New economic plants which are under cultivation in other countries will be shown in this exhibit to demonstrate the possibility of cultivating them in this latitude.

10. The common poisonous plants, such as the loco and the poison hemlock, which create havoc among stock, will be shown that the farmer may learn to identify them and thus circumscribe the damage they do. Poison ivy, poison oak, poison sumac and such plants will also be shown, each properly placarded that the visitor may know them.

11. Fiber plants, such as flax, hemp, cotton, jute, sisal, will be shown, together with the products from them in various stages.

12. A school garden, such as is used in some of the Eastern States in instructing public school pupils in nature, will be maintained, showing not only the ordinary decorative plants, such as dahlias, asters, hollyhocks, but also garden vegetables, such as radishes, cabbage, turnips and cauliflower will have a place here.

Mr. Spillman believes that ten acres will be sufficient for all these purposes. He will have charge of the grasses and forage plants. The details of the other exhibits will be worked out by the heads of departments. M. A. Carleton will have charge of the cereals, V. K. Chesnut will have charge of the poisonous plants, L. H. Dewey will have charge of the fiber plants.

Dr. B. T. Galloway, the chief of the Bureau of Plant Industry, and his assistant, A. F. Woods, will be in charge of the exhibit.

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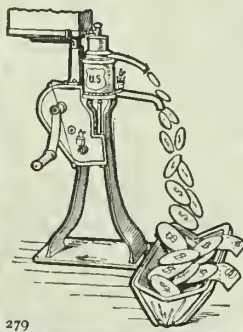
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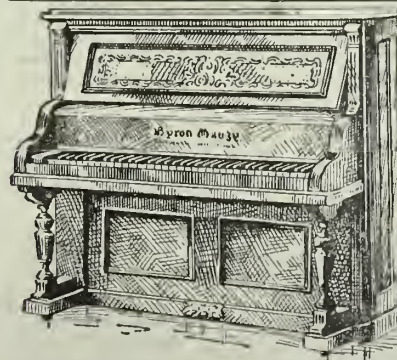
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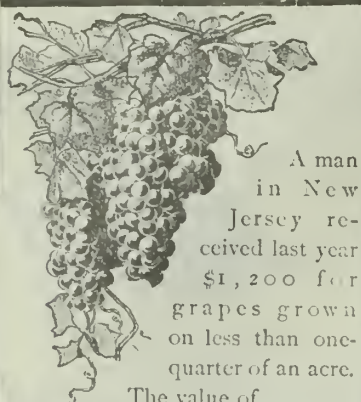
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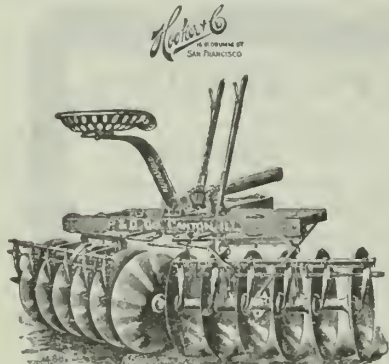


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National Master Coming.

The Granges throughout the State, but in Sacramento and Sonoma counties in particular, are making preparations for an event of importance to take place next year, according to the Santa Rosa Republican. It is nothing less than a visit from Grand Master Johnson of the National Grange. He is coming to California early in the season, probably in May, and will spend some time in this, the banner Grange county of the State. Sacramento and Sonoma are the only counties in California possessing a Pomona or county Grange, hence they will receive especial attention from the national official. Of the two counties Sonoma holds the palm. The visit of Grand Master Johnson will be the first one ever paid by the highest official of the Order to the Golden West.

About Roads.

This morning the big rock crusher will start up again, after a few days' inactivity on account of the rain. Yesterday Supervisor Miller had teams engaged in hauling crushed rock from the bin to the North Star road. The bin, now being empty, will be repaired and refilled, which will keep the wagons busy. That part of the road already covered shows wonderful improvement, says the Grass Valley Union.

Nevada county joins Yuba on the east and the line is only 2 miles from Smartsville. The roads in that county are in far better condition than in Yuba, a fact readily recognized by all who travel between Marysville and Grass Valley. The supervisors of Nevada county bought these rock crushers, one for each road district. The expenditure of money for work on the roads of Nevada county produces good results. Each year additional mileage is added to the good, substantial roads there. At the same time the total expenditure is not greater than in Yuba county. The writer recently traveled more than 30 miles on roads in Nevada county, and at the points visited made inquiry relative to the cost of good roads created by adding crushed rock. One of the advantages of a rock crusher owned by the county is found in saving in repairs after a rock foundation has been laid for a road. Of course, a rock crusher is not a genial companion of a supervisor in a road district where a system of nursing of roads has been in progress that will produce \$50 or \$60 a month in "road viewing." But in a road district where a road commissioner is a man of the people—one who cares more for the good will of his constituents than for the compensation he can secure by nursing the roads year after year—a rock crusher is worth its weight in gold. In Sutter county, which joins Yuba on the west, the supervisors bought a rock crusher several years ago, and they have many miles of good road bed as a result.—Marysville Democrat.

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BIG BURGER GRAPE CROP.—Healdsburg Enterprise: W. L. McCray of Cloverdale has just harvested 47½ tons of Burger grapes from two acres. The vines are planted 6 feet apart each way. As the percentage of sugar is low the grapes bring only about \$20 per ton, but even at that give the owner an income from those two acres of \$960, or \$480 per acre. The cost for cultivation is \$15 per acre, picking at \$1.50 per ton \$71.25, and hauling \$1 per ton \$47.50; total expense \$149, leaving \$400 per acre net.

ABOUT INCUBATORS.—Argus: The Petaluma Incubator Co. will open salesrooms in San Francisco. On Monday the Must Hatch Incubator Co. received an order for six incubators from a Chicago man, six from Morristown, Tenn., and six from Woodland, Cal. All were rush orders. A corporation was recently organized to carry on the business.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING OCTOBER 28, 1902.

- 711,928.—WINDMILL—J. Aeschlimann, Whatecom, Wash.
- 712,245.—RAILWAY SPIKE—Betts & Whitaker, Pendleton, Or.
- 711,934.—SCALE—C. L. Bond, Los Angeles, Cal.
- 712,432.—SAW HANDLE—J. Chambers, Everett, Wash.
- 712,363.—GARMENT STRAP—M. Dattlebaum, Oakland, Cal.
- 712,269.—STEAM BOILER—C. Diedreash, Stockton, Cal.
- 711,957.—BALL BEARING HUB—T. R. Garner, Los Angeles, Cal.
- 712,371.—STOP AND RELEASE FOR PLOWS—V. T. Gilchrist, Benicia, Cal.
- 712,137.—PORTFOLIO—J. R. Jackson, Santa Clara, Cal.
- 712,142.—OIL BURNER—Kittle & Harpham, Los Angeles, Cal.
- 712,458.—BEAN PULLER—C. H. Knapp, Halfmoon Bay, Cal.
- 712,321.—FUMIGATOR—T. H. McDonald, Elk Grove, Cal.
- 712,150.—CARBURETER—E. D. Parrott, Portland, Or.
- 712,332.—SHOE CLEANER—W. Richardson, Colfax, Wash.
- 712,444.—BOTTLE LOCK—W. E. Swett, S. F.
- 712,346.—PHOTOMETER—E. T. Turney, S. F.
- 712,164.—PUMP—R. G. Whitlock, Los Angeles, Cal.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

REFORESTING THE MOUNTAINS.—San Bernardino Times-Index: The Government Bureau of Forestry will attempt to restore the verdure of the mountains lining the San Gabriel valley. Mt. Lowe will be the base of operations. The seeds used will be those gathered by T. P. Lukens of Pasadena, in the mountains near San Bernardino.

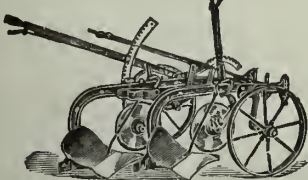
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Matty Clay's Aaggie 2d.	499	7 "	23. 15 oz.	Minnewawa Salambo, 3 teats	403	4 "	16. 1 "
Ruda 2d Belle	401	7 "	20. 9 "	Mountain Juliet	382	7 "	15. 9 "
Minnewawa Lily	384	4 "	20. 4 "	Lady Kurts Alpa	378	6 "	15. 3 "
De Kol of Valley Mead	435	3 "	19. 9 "	Corona Acturas	344	2 "	14. 1 "
Wynetta Princess	391	2 "	18. 7 "	Segriss Pietertje le Kol 2d.	355	2 "	12. 11 "
Minnewawa Louise	474	3 "	18. 5 "	Western Princess	294	3 "	12. 11 "
Drusa	393	5 "	18. 4 "	Painted Lady	327	3 "	12. 10 "
Wakalona	393	5 "	18. 3 "	Mary Ann De Kol	391	3 "	12. 10 "
Olympia Clay	536	6 "	18. 2 "	Miranda Acturas	325	3 "	12. 3 "
De Natsey Baker	377	2 "	17. 7 "	Hengerveld Lass	306	2 "	12. 2 "
Western Duchess	387	7 "	16. 6 "	Wild West De Kol	279	2 "	10. 19 "

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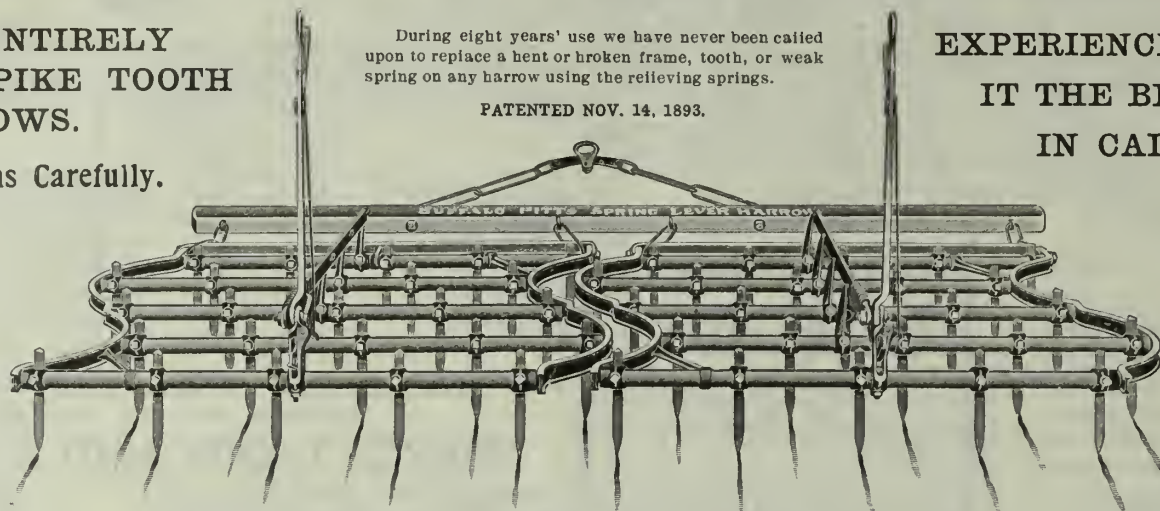
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 21.

SAN FRANCISCO, SATURDAY, NOVEMBER 22, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Sheep Forage of the Sierra Region.

We give on this page portraits of four plants which are counted useful by the sheep herders of the Sierra region of central California and Nevada, and which were photographed by Messrs. Kennedy and Doten of the Nevada Experiment Station for their excellent bulletin which we have already introduced to our readers. First is the "cow parsnip." It belongs to the large parsley family which has about 1300 species, and can usually be recognized by their peculiar but sometimes quite pleasant odor. Most of them are edible, but a few like the water hemlock or wild parsnip are exceedingly poisonous. This plant is met frequently along the banks of irrigation ditches and closely resembles the garden parsnip except that it has white flowers instead of yellow. But our Nevada writers say that the herders usually consider all plants of the family as good forage for sheep. The cow parsnip shown in the picture has large, somewhat woolly leaves and stems and grows from 4 to 8 feet high. It is usually found in rather moist situations in the meadows among the shrubbery, and is considered a very valuable plant by the sheep herders, who say the sheep are particularly fond of the juicy stems, and they wish it were more plentiful.

Three sunflowers are also shown. One is the "common sunflower." This plant is found abundantly on dry hillsides and open places in the forests. It occurs in large patches, often very dense, and during the months of June and July produces a large

number of large yellow flowers. When a band of sheep comes to a patch of this sunflower the leaders rapidly eat off all the flowers; those following them pick out the young, tender leaves in the center of the plant, while those in the rear bite off the old leaves, eat the stem and then trample on the blade, leaving a very dejected-looking patch. Mr. Van Buren said that during the month of August, when forage is not so abundant and some of the ranges are being grazed for the third or fourth time, sheep will eat a considerable quantity of the leaves. The herders also said that in the autumn, when feed is scarce, the sheep eat the dead dry leaves. Prof. Coville mentions a species of sunflower (*Wyethia*) growing in the mountains of Oregon, which is the favorite spring food for sheep. It is unfortunate that the sheep do not care much for this plant, as it occurs in great quantities, and has a very long, tough root, an inch or more in diameter, which could not easily be trampled out by continuous grazing.

The tall sunflower was found on many parts of the ranges visited, but not so abundantly as the common sunflower just mentioned. It is

a perennial plant, with thick, resinous roots, large, somewhat woolly leaves and yellow flowers. The two species, although similar in general appearance, can be readily distinguished by a comparison of the leaves. The big sunflower has two pointed lobes at the base of the blade of the leaf, while the leaves of

the common sunflower merely taper to a point at their junction with the stem.

The little sunflower was found to be quite common on dry hillsides on the ranges around Webber lake, usually in company with the big sunflower and tomato plant. It was noticed that the sheep ate a considerable quantity of it, but the herders were inclined to believe that the quality of the feed was poor. The plant can be readily distinguished from the other sunflowers by the narrowness of its leaves and smaller flowers.



Cow Parsnip (*Heracleum Lanatum*).



Common Sunflower (*Wyethia mollis*).



Big Sunflower (*Balsamorhiza sagittata*).



Little Sunflower (*Helianthella Californica*).

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Advertising rates made known on application.

Entered at S. F. Postoffice as second-class mail matter.

DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, November 22, 1902.

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The Week.

Rains have again covered the upper half of the State and are in fact becoming almost of too common occurrence for special mention. The storm of Tuesday was, however, so peculiar that even the Weather Bureau, which knows storms as a farmer knows beans, finds racy features in it. Instead of coming eastward from the ocean Mr. McAdie says this one moved rapidly southward from Idaho into Nevada and then westward over the Sierra into California; then started northward again and caused very high southwest winds in Nevada. This will be accepted by the lay mind as another sign of a good year—a year when it rains from all around the sky. It will be just as well now, though, to lighten up and allow people to get in a couple of weeks good work and otherwise settle down for a heavy winter.

The wheat market is still improved over last week's figures, though at the close buyers seem to be less eager but sellers are firm. Futures are advanced and fairly strong. Barley has done well also and other grains are in good shape. Beans are only doing fairly although considerable stained lots are offered. Hay is advancing. Millstuffs are irregular and show some reductions. Medium hogs still have the advantage as small are too plentiful. Butter is firm and higher for fancy creamery. Eggs have a drooping disposition owing to weakened demand. Poultry has advanced and the Thanksgiving outlook is good. Fruits are not strong, though new oranges are selling well and are unusually well ripened for this date. Dried fruits are not active. A detailed account of the trade is given in our Market Review. Hops are firm at a slight advance.

The advance in wheat is bringing much comfort to the growers in eastern Washington, who are said to have about 5,000,000 bushels still in their hands, for which they can get 15 to 20 cents more per bushel than they could a short time ago. They are selling freely at the new figures, which is perhaps wise. Wheat is running into Seattle and Tacoma at the rate of sixty-five to eighty car loads a day.

London dispatches give the California shippers much credit for pushing fruit upon the English markets. They say that the success of the Californians is attributed to their skill in packing, whereby the fruit reaches them in good shape. The Gardeners' Magazine says California shipments of plums in October aggregated 5000 tons over the previous record years, while the farmers of Kent left their plums to rot on the trees and ground, saying that it was not worth while to pluck them. We wonder how long that will last. The probability is, however, that the

California fruit is not only handsomer, but so different in texture that the soft plums of Kent cannot sell beside the California for the high-class demand. The character of California fruits is something which cannot be reached in climates different from ours, and though some people claim to like more juice on their waist coats, others are willing to pay more for the handsomer, firmer fruit.

According to consular reports it appears clear that Italy must largely replace her vineyards with resistant roots owing to destruction by phylloxera. The report is that many provinces in Italy have been invaded and that not less than 750,000 acres of vine land have been entirely destroyed. It took the insect nine years to make its way from France to Italy, but the Italians have not been as energetic as the French in averting ruin by replacing their vineyards with resistant roots. There is a hint for California in the Italian situation and that is to hurry the vineyards upon a good foundation as rapidly as practicable. We are gaining in safe acreage every year even though the planting is still being made with uniform cuttings.

The Supreme Court of the State has overruled the decision of Superior Judge Campbell, refusing the prayer of people of San Bernardino for an injunction to restrain the water of the Walkinshaw wells from being taken to Riverside to water orange groves, thereby destroying the character of hundreds of wells in San Bernardino, in many cases the water sinking so low that it could not even be pumped out. The case is sent back for retrial. Much of the prosperity of San Bernardino City depends upon the case going one way and that of some Riverside orange groves upon its going the other.

Eastern Oregon is out for its share of national irrigation work. A meeting was held in Portland on Tuesday of this week, at which about 400 delegates were in attendance from various sections of the State. The gathering is described to be one of the most important ever called together in Oregon, and the early reclamation of a vast portion of the arid lands of the State probably will follow the action of the convention. It did not seem to dampen the ardor of the convention that there had been a steady downpour of rain for two days before the meeting, and the chairman was cheered when he said that \$1,000,000 can be properly expended in Oregon in artificial irrigation. This Portland meeting shows that there is an issue rising sharply between different policies in the promotion of the work by the Government. Perhaps the same issue will crop out at the meeting in this city on December 5.

Dr. A. D. Hopkins has just returned from an extended trip to Arizona, southern California, northern Idaho, the Puget Sound country and the Black Hills, where he made investigations of the damage done timber by insect pests. In the Black Hills about 600,000,000 board feet of yellow pine has been killed by the pine destroying beetle. Dr. Hopkins recently returned a report on the best methods of lessening the damage, in which he recommended to the Department of the Interior that all live trees infested with beetles should be cut in the winter and their bark removed, a process which kills the insects. This recommendation has been adopted. Dr. Hopkins is in charge of forest insect investigation of the Division of Entomology, U. S. Department of Agriculture, co-operating with the Bureau of Forestry.

A statement by one of the contemplated assignees of the Prune Association as to the success of the effort to quickly close up the affair is to be found upon another page. A San Jose dispatch, dated November 17, confirms the news of our correspondent, for it claims that the Association's affairs "will go into the hands of the receivers before the end of the week. Only the formal acquiescence of 200 more of the Association members is necessary to fulfill the requirements of the law, and those who have the movement in charge know where these votes can be obtained. Special agents will be sent out the first of the week to hurry up the tardy prune growers. W. P. Lyon, C. W. Childs and E. T. Pettit, the receivers named, expect to be in charge at the close of this week. Some opposition still continues and circulars have been sent out advising the growers against the receivership." If this statement is accurate, it shows that the membership is more

anxious to be set free upon any terms than to continue. The receiver proposition has secured its necessary vote in a few days, while months of delay did not bring a quorum to vote for improvements.

QUERIES AND REPLIES.

Pruning Bartlett's—Root Knot.

TO THE EDITOR:—I have some Bartlett pear trees about twelve to fourteen years old, on adobe soil, which have altogether too much wood, not big wood, but what I would call streamers. Everything seems to run to wood and last year, for that reason, I left them pretty well alone. Could you give me some sort of an idea of the best way to prune them? Can you give me a remedy for black knot on almond root?—READER, Los Gatos.

Your treatment of Bartlett pears, which run to wood instead of fruit, seems to have been all right because continued cutting back does lead to excessive wood growth, but you do not say what the effect of allowing them to go unpruned last year was. Did they bear more fruit last summer after such treatment? If so, it would be well to shorten-in those long branches, trusting to the newer growth to make fruit spurs in the future. If, however, in spite of the treatment you still get more wood growth and no fruit, it may be that you need pollination by some other variety. What can you ascertain by inquiry or observation concerning other Bartlett pear trees in about the same situation? There is much, not stated in your letter, which may influence the behavior of the tree, and it is hard to give an intelligent opinion about it. We would be glad to consider a fuller statement if you desire to make it.

The best treatment for root knot on the almond is to remove the knots cleanly with a chisel or sharp hatchet and paint the wound with Bordeaux mixture. This seems to prevent recurrence at the same spot and subsequently the trees must be examined and treated for knots that may form.

Licorice Growing.

TO THE EDITOR:—I would like information on licorice growing and where the roots can be obtained.—W. S. M., San Diego.

The licorice plant grows very well in deep, light soil. It requires this depth and lightness for the rapid extension of its roots. It does not answer commercial requirements well upon shallow, heavy or dry soil, for the requirements are for a straight root, feet or even yards in length, and this can only be had where there is plenty of moisture and ready permeability in the soil. The problem then is, having good roots reaching down in all directions, to get them out of the ground profitably. This point has not yet been reached. Considerable experiment with licorice growing on moist land near the Sacramento river did not succeed, because the cost of getting the roots out of the soil and the freight rates to eastern markets in competition with the Sicily product. It has also appeared clear that in order to succeed with the licorice crop, even if the cost of uprooting is satisfactorily arranged, there must be extracting factories by which the juice extracted from the roots can be condensed into the black stick licorice. This must be done in California because the cost of transportation to eastern extractors is too great. The amount of licorice root, either as wood or as powdered wood, is too insignificant on this coast to warrant any one in starting an industry on that basis. Besides, licorice is a most pestiferous weed in all places where it thrives well, and having filled the land with it, it is next to impossible to get it out again. Under present conditions we do not see very much at present in licorice culture in California.

Hulling Black Walnuts.

TO THE EDITOR:—In your issue of Nov. 8, page 291, W. A. Threlfall asks "How to cull black walnuts." A good way is to run them through a hand power corn sheller, after the hulls are partially decayed.—JAMES SHEARER, Idaho.

Brome Grass in California.

TO THE EDITOR:—Can you tell me anything about brome grass? I have read that "it outyields alfalfa," "surpasses timothy in nutrition," "yields four or five tons per acre" (East), "grows well in light soil or wet, swampy land," "has no equal for arid regions," "drouth will not kill it," "gives as much food in one month as alfalfa will in three," and that "animals enjoy it green or dried." I have forty

acres in Fresno county, with water—twenty in alfalfa and the balance too high to irrigate. Do you think that if I were to furrow the land so as to run the water over lengthwise, and plant some such crop as, for example, brome grass, it would be a success? I have not had the levels on the land, so do not know just how much too high the land is, but I assume that it is not more than 2 or 3 feet. To the eye the land is flat. There would be the gopher pest, but as it is the land does not pay, and I want to make it pay. I would like to put it into something permanent.—READER, San Francisco.

The Eastern accounts which you have read about brome grass are not strictly true in California. It will not live through the summer on our dry interior uplands, nor on sandy plains. It will do pretty well with a moderate amount of water, but will die on dry land. It is not to be compared with alfalfa under irrigation. It is better than alfalfa in one respect, and that is that it will make a good winter growth, while alfalfa is dormant, but in volume of growth and in nutritive value it is vastly inferior to alfalfa. Perhaps on land which you speak of if you should start brome grass now it would catch well and make a good winter growth, and then, if you could give it a little water by furrowing or free flooding during the summer, the roots might retain their life and start again into verdure with the first moisture of the autumn. The plant will not be so susceptible to injury by gophers as alfalfa or other fleshy rooted plants would be. It is possible that Australian salt bush would be successful upon the land, if you cannot get better plants to grow.

Peas, Beans and Grapes.

TO THE EDITOR:—What varieties of dry peas is it that are always quoted in market reports as "green peas, California," and "Niles peas?" Is either one the dried peas of our table varieties; if so, large or small varieties? Are the dried beans called "black eye" the same as "black-eyed wax beans?" What objection is there, if any, to running the Zinfandel on a single wire as we do some table grapes?—A TWENTY-FIVE-YEAR SUBSCRIBER, Santa Cruz.

The dried green peas are large, often wrinkled, and of a light green color when dry. The Niles peas are smooth, small and cream colored when dry. The black eye dried beans are not of the wax beans class. The only objection we know of to growing the Zinfandel on a wire is that it is expensive and troublesome and restricts cultivation to one direction, and as the vine takes kindly to short pruning, making the cheaper method practicable, it is commonly grown that way.

Pearl Millet and Kale.

TO THE EDITOR:—Are Pencilaria Zealanica and pearl millet the same? Is the thousand-headed kale a good variety to plant?—D. K., Chicago.

Pencilaria spicata was introduced from New Zealand about twenty-five years ago and called pearl millet because of the resemblance of the seed in shape to small pearls. The probability is that the Pencilaria Zealanica is a revision of the botanical name. We have seen fine specimens of the plant recently grown with irrigation in the interior parts of California that struck us as larger and finer than the plant appeared when we first introduced it to this State, but this may have come about by selecting the best specimens. The plants seem to be the same.

"Thousand-headed kale" is a very good forage plant for the coast region of California, or for winter growing in certain interior regions where frosts are are not too heavy. It is, however, quite hardy to frost and makes a good strong growth in the interior, while moisture is present, but is not very satisfactory in resisting drouth. It has been chiefly used in this State as green feed for chickens, although it is eaten quite freely by other stock. If the freezing is not too hard the plant lives through the winter time and makes a new growth the following year and readily restores its foliage after plucking. In this way one can use the old stumps for a considerable time.

Vegetable Growing.

TO THE EDITOR:—Does your book on "California Vegetables" tell where and how I can get 50 or 100 acres to lease for vegetables, etc.? I have a relative coming out from Vermont and we would like to go into truck farming. Does it tell how to grow vegetables, when to plant and how much seed per acre, etc.?—NEW COMER, Oakland.

Our book entitled "California Vegetables in Field

and Garden" tells where each kind of vegetable is chiefly grown commercially. It also discusses in detail the conditions of soil and climate of the different parts of the State so that the reader can adapt his practice to meet the needs of each. It also gives full details of how each kind of vegetable can be most successfully grown in California, giving everything from seed to gathering of the crop. It does not tell how to get the land, because there can be no prescription about that. It tells you where to look and what to look for, but you will have to find the land by personal observation or inquiry or through local agents in the places which are well suited and commercially desirable.

Poultry Feeding.

TO THE EDITOR:—Can you tell me through your paper whether ripe tomatoes are injurious to laying hens if they have free access to them and eat them of their own will. They do not seem to hurt mine, but a neighbor tells me they will cause chicken pox. Should chickens be fed all they will eat for their breakfast? Is soaked wheat best for morning or night meal?—A SUBSCRIBER, Gardena, Los Angeles county.

Our chickens have always had all the tomatoes they desired and we never saw any injury resulting. We believe they are as good for fowls as they are for people and have no more idea they cause chicken pox in fowls than they do rheumatism in people—for some people charge them with that. As for feeding chickens, they never should have all they will eat for breakfast or at any other time, unless it be dry grain for fowls on a good range. Under such conditions if the grain is always ready they will not overeat, but will chase out on the range in the hope to find something better. Yarded fowls should usually be fed what they will eat up clean in a reasonable time and not tempted to fattening if eggs are wanted. We have always fed dry wheat at night and soft stuff in the morning, but we notice that some reverse the process and do well. We never could see any advantage in soaked wheat for laying hens. It might be of considerable advantage for forcing fowls for market.

Tight Floor for Stable.

TO THE EDITOR:—Is there any substance that can be used to make a watertight floor for a barn, to catch the liquid manure in a vat or cistern—I mean something that would not cost so much as Portland cement, and which could be mixed with some variety of clay or earth?—J. W. ARMSTRONG, El Dorado county.

We do not know of anything to be used as you describe which would not work up under the feet of the animal and become unsatisfactory. Something hard enough to stand wear is needed as well as imperviousness to moisture. Broken rock, well rammed and covered with Portland cement, or concrete afterwards faced with cement, as described in detail in our issue of April 26, 1902, is probably the best kind of a stable floor for the purpose you describe. A mixture of asphaltum and gravel over a broken rock foundation would also be good if you had the apparatus to boil the mixture, as they do in putting down asphaltum walks, but probably all this would cost you more than cement, considering the freight and outfit for boiling and mixing. If we could not command a good cement floor we should use sound plank, closely fitted and nailed and covered with crude oil or hot coal tar after laying. Can any reader commend anything nearer to what our correspondent asks for?

State Fruit Growers' Convention.

TO THE EDITOR:—The twenty-seventh annual Fruit Growers' Convention will be held at Pioneer Hall, San Francisco, under the auspices of the California State Board of Horticulture, opening on Tuesday, Dec. 2, 1902, at 9 o'clock A. M., and holding daily sessions to and including Friday, Dec. 5, 1902.

A cordial invitation is extended to all fruit growers, shippers, wine makers, raisin growers, packers, nurserymen and to all others interested in this, the principal productive industry of our State, to be present and take part in the proceedings of the convention.

Very many questions of vital importance to all concerned in the fruit industry in all its forms will come up for discussion and consideration at this convention and it is to the direct interest of all to be present. Most of these questions are on the serious problems that now confront the fruit growing industry, and which alone can be solved by the combined

wisdom and energy of the fruit growers and their working harmoniously together.

Essays by leaders in various branches of horticulture will be presented to the convention and discussions will be held on all topics of importance.

Arrangements have been made with both the Southern Pacific and Santa Fe railroad systems by which people attending the convention will receive greatly reduced rates. It will be necessary for each person who desires to avail himself of these reduced rates, to pay to the local ticket agent of the railroad company from which he buys his ticket the full transportation charges to San Francisco and demand from that agent a receipt for the same, made out on a blank which has been furnished him. This receipt, when countersigned by the secretary of the convention, will entitle the attendant to purchase a return ticket at one-third the regular fare.

ELLWOOD COOPER, President.

J. J. KEEGAN, Secretary.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 17, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Cloudy weather prevailed most of the week, with frequent showers and heavy rain at the close. Light frosts occurred in some sections. No damage was done by the high winds on the 9th. High water and the overflow of bottom lands in Butte, Colusa, Sutter and Glenn counties caused considerable damage to corn, beans, grain and drying fruits, and there was some loss of live stock along the tule lands. Summer-fallowed grain is up and making rapid growth. Green feed is plentiful and improving rapidly. Plowing and seeding are progressing. Olive picking is progressing. Oranges are of excellent quality, large size, and the yield is about the same as last year.

COAST AND BAY SECTIONS.

Rain fell at intervals during the week in the central and northern counties, in some cases retarding farm work. Light frosts occurred in some places this morning. There has been an abundance of rain in all sections for present purposes, and the soil is in excellent condition. Plowing and seeding are progressing rapidly. Early sown and volunteer grain are making good growth. Green feed is abundant and stock are in good condition. The heavy rains have damaged the potato crop in portions of Sonoma county. Citrus fruits continue in good condition.

SAN JOAQUIN VALLEY.

Partly cloudy and cool weather prevailed during the week. Heavy rain fell Monday in all sections. The rain was very beneficial in preparing the ground for plowing and seeding, but did some damage to the wine grapes still in the vineyards. Large quantities of grapes are being shipped to the wineries. Some prunes are still on the trays and are drying slowly on account of the cool damp weather. Plowing and seeding are progressing rapidly and the early sown grain has started since the rain. New grass has started. Stock are reported thin in some localities, but healthy. Light frosts occurred in some sections, but caused no damage. The orange crop is reported excellent both in quality and quantity. The first carload of Navel oranges from Sanger this season was shipped east on Tuesday. The fruit was of excellent quality and is three weeks earlier than previous years.

SOUTHERN CALIFORNIA.

Cool and generally clear weather prevailed during the week. The generous rain at close of last week was very beneficial to orchards and green feed, and in most places was sufficient to soften the soil for cultivation. Walnuts were somewhat damaged and picking was retarded. Raisins were not materially damaged, as ample warning had been given and trays were stacked. The continued cool, damp weather is retarding raisin making in San Diego county, but the crop will probably reach the packing houses in good condition. Oranges continue in excellent condition and are coloring rapidly at Azusa.

LOS ANGELES SUMMARY.—Fine, soaking rains since close of last report benefited all vegetation, though some damage resulted from washing. Some beets and walnuts yet out were injured. Grass is much improved.

EUREKA SUMMARY.—Continuous rain during the past week greatly interfered with apple picking. Grass growing finely. Farm work is suspended.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 19, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Same Date to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	8.57	7.01	7.01	7.01	66	38
Red Bluff.....	1.03	10.02	4.99	3.94	66	38
Sacramento.....	3.4	3.63	3.36	2.83	64	40
San Francisco.....	4.0	3.8	2.66	2.72	60	48
Fresno.....	2.4	1.70	3.46	66	40	
Independence.....	3.8	1.0	1.05	60	28	
San Luis Obispo.....	3.62	3.62	3.94	2.74	64	42
Los Angeles.....	2.37	2.37	2.46	1.71	76	48
San Diego.....	1.35	1.35	.75	.98	70	48
Yuma.....	.00	.61	.22	1.16	78	40

THE RANGE.

Summer Ranges of Western Nevada Sheep.

NUMBER III.

By P. BEVERIDGE KENNEDY and S. B. DOTEN in Bulletin 51 of the Nevada Agricultural Experiment Station at Reno.

SHEEP HERDERS.—The sheep are divided into bands of from 2000 to 3000 in a band, each band usually being cared for by two men—one the herder, the other the cook and camp tender. The former has charge of the sheep while grazing, and usually sleeps wherever the sheep camp down for the night, keeping a close watch on them and returning to the cook's camp only for his meals. The latter—the camp tender—has charge of the cooking and the moving of the camp, which takes place usually about every three days. Where a large number of bands are owned by one man, he usually hires one or two foremen who superintend the work at the time of dipping and shearing, and who go ahead on horseback during the summer, finding out the condition of the ranges and directing the sheep herders as to where their boundary lines lie and the route they wish them to take.

The class of men which were in demand for herding the sheep were known as Basques, or "Bascos." They come from the Pyrenees mountains, and are designated French or Spanish Basques, according to the sides of the mountains in which they lived. They naturally take to the life of solitude, as they and their ancestors have been employed in a similar occupation in the Pyrenees mountains for many years

now produce a very small quantity of forage to the acre. Good forage plants, like the tomato plant, are so severely grazed during the hot summer that the crown is injured and death results. Brush is so constantly nibbled that the branches become short and distorted; and, unable to produce leaves, they finally succumb. When the plants, with their roots, are gone, then come the fall rains which wash the rich surface soil into the streams and leave behind poor soil, which soon becomes hard, so that succeeding rains rapidly run off. When the roots of the plants are destroyed there is nothing to hold the soil together, hence it is easily washed, forming gulches which in time become creeks during the rainy season. This condition of the range can be seen from Webber lake to Soda Springs station on the north, and from Summit Soda Springs to Soda Springs station on the south, where every year numerous bands transverse this region to be shipped on the railroad.

Severe trampling must also be considered in regard to its effect on the plants on the range. Owing to the large number of sheep which pass over the land and their habit of feeding in close bunches, makes them more destructive than other kinds of stock. Contrary to our expectations, however, young fir seedlings, from 2 to 6 inches high, were not injured by the sheep passing over them. They do not eat them, and the plants seem to be of such a wiry texture that they spring back into place as soon as released by the feet of the sheep.

It seems to the writers that, with proper care and management, the forage on the ranges of the Sierra Nevada visited by them might be made to produce double the amount now growing on them, as devastation has only just begun. Most of the best forage

mohair in the United States. Other worthy institutions have followed them in its use and they also claim a share of our gratitude. The grower and manufacturer of mohair have joined their energies to build up a great industry, and how can it fail!

THE NEW ERA.—The renewed life of the Angora goat industry came less than three years ago, but to-day every State and Territory has its Angoras, and there is every indication of permanent success with them. Three years ago this beautiful and useful animal was a stranger to the great mass of the people; now everybody knows what it is and what it is good for. This knowledge has not been imparted to the people without much effort on the part of the membership of this Association. Many of you have known for years of the possibilities of the Angora goat, but the great mass of people did not know. They all know now, however. You knew that the Angora was a beautiful and docile animal; if the general public knew anything about it they considered it an uncouth, ill-smelling, cavorting denizen of the back alleys and vacant lots; in three years you have shown them—"shown them" in Missouri, too—that they were wrong. You have known for years that the flesh of the Angora was equal to the best mutton; but the general public thought it was tough and strong; you have convinced them that they were wrong, and whereas they once would not think of eating goat meat any more than they would of eating a skunk, they now know it to be a delicacy. Think of a man who would condemn Angora venison and yet will eat hog meat or a chicken or a duck! The sentiment which has ruled heretofore is now reversed. You have known for years that the goat would destroy brushwood, but you modestly held your peace; the general public never considered them an economic factor in this respect; but Dr. Standley has "shown them," and they can not doubt their own eyes. You have known for years that the fleece was beautiful, durable and valuable. The general public did not give the matter a thought further than to doubt your statements; you have "shown them" their error, and have surprised them by proving to them that practically all of the car plushes, their furs, their bearskins, their best rugs, and dozens of other things, are all made of mohair.

All these things you have known for many years, but it was necessary to remove all doubts from the minds of the public before there could be any considerable enlargement of the industry. This has been done in three brief years and now the Angora is an honored resident of every State and Territory, and his honors will increase as renewed opportunities are afforded him to show his many useful talents. I believe the Angora goat industry is a settled fact. It never was a fad, and its days as an experiment have passed. Inasmuch as you can raise the Angora, and it can raise a fleece, and the manufacturers can raise the price, what more is necessary to insure the success of the industry.

THE OUTLOOK.—So much as retrospect. Let us now take a glance at the present and the future.

The lesson learned at the exhibits of the American Angora Goat Breeders' Association is not that the flesh of the Angora is superior, not that he is a great brushwood destroyer, not that he is a valuable fertilizer of the soil, not that he will convert waste land into excellent pastures for cattle, sheep and horses—for these facts you know already—but that the demand is for better goats. We have in the United States at this time many animals which are the equal of if not the superior to any others in the world, but the whole body of Angoras must be improved. The blood of the best must filter through all. I believe the time has arrived when the practice of crossing the Angoras upon common does should be discouraged. So long as this practice is continued the industry will be contending with adulterated stock. True it is that this Association deals only with registered stock, but should it not exert its influence for the industry as a whole? You are vitally interested in the quality of mohair that the country produces, for upon that quality depends the success or failure of the industry. We must remember that there are thousands of beginners in this industry who are not yet well informed concerning the desirable qualities of the Angora goat, and who are largely dependent upon the one from whom they purchase stock, and we must also remember that there are ignorant and unscrupulous dealers who will ignorantly or willingly impose upon purchasers. Should not the members of this Association, in the interests of their own pocketbooks as well as the industry, discourage the breeding of low grades and insist that all goats should be sold for what they are? Let us discourage all deception concerning the industry.

We ought also to discountenance the practice of calling low crosses by the dignified name of Angora. They are now called Angoras and sold as Angoras, and their purchaser oftentimes wonders why his goats are not so profitable as others about which he hears. Besides, being sold necessarily at a low price, the tendency is to a lower leveling of all prices. A cross between a Hereford and a Shorthorn is neither one nor the other, and a cross of a donkey upon a Percheron mare results in neither an ass nor a horse; so a cross of an Angora buck upon a common goat does not produce an Angora. Let this



A Band of 3000 Sheep on the Snow on Mt. Lola Range.

past. The wages paid them are from \$30 to \$40 a month, with board. Their savings are often spent in a trip to their homes in Europe, where they live a life of ease for one or two years, and then return to America to herd sheep again. Italians, Americans and other nationalities are sometimes employed, but they are rarely as contented and successful as the Basques.

An Italian sheep herder at whom the other sheep herders poked a great deal of fun on account of his peculiarities, invariably had the best batch of lambs for the market. On asking the reasons for this we were told that it was due mainly to his methods of herding and knowledge of the food value of the plants, along with many years of experience over the same territory, and conscientious attention to duty. He very seldom put a dog on the sheep, allowing them to spread out as far as reasonable safety from loss would allow, often walking considerable distances around the lambs and ewes, rather than frighten them and crowd them together with a dog, when the forage could not be so evenly grazed by all, or the sheep so contented as to make the best use of the food eaten. Their knowledge of English is usually very imperfect, so that even when they were willing to give out information they were unable to do so in a satisfactory manner. Some of them were very suspicious in regard to our motives, believing that we were Government spies, or that we were trying to find out just what kinds of forage it was that made the mutton from Nevada sheep superior to others. By finding this out, we could then introduce those particular forage plants into other States, which would then be able to produce equally as good mutton.

PRESENT CONDITIONS.—A great difference exists as to the degree to which different parts of the summer range have been injured by sheep grazing. Some sheep owners are alive to the fact that judicious and scientific methods must be used in grazing on the ranges, while others seem to think that it is impossible for the grasses and forage plants to become exterminated, no matter what the treatment. Because of this condition of things, there can be found some ranges on which the seed is almost as plentiful as it was ten years ago, while others can be found that have

been cropped closely several times every year and plants are still there, and all they want is an opportunity to reseed themselves at least every other year. The soil is rich and capable of producing a much larger quantity of forage than is now on them. If the present methods on many ranges are continued, within a few years the number of sheep will have to be greatly decreased, more land will have to be rented, and finally the sheep industry, which adds greatly to the prosperity of the State, will come to a close.

SHEEP AND WOOL.

The Angora Goat Industry.

By GEO. F. THOMPSON, of the U. S. Department of Agriculture, before the American Angora Goat Breeders' Association.

The Angora goat industry, which made a strong effort to establish itself in the United States in the early fifties, failed because there was no market for the mohair and no machinery anywhere to fabricate it. There seemed to be no future then for the Angora as a meat product or as a brush destroyer, and, without market for the fleece, he was but an ornamental appendage. The industry therefore slipped back into oblivion, being aided in its descent by the fortunes—or misfortunes, perhaps—of the Rebellion. Did the industry die? No! There was a Peters, a Landrum, a Bailey, and a Harris who possessed that American characteristic which prompted them to hang on till the dawn should dispel the darkness that enveloped them then. The dawn came; it was only a short time ago; and now we see the sun of prosperity rising on the industry which these men nourished in modesty and obscurity for more than forty years. The goat men of this country owe much to these men—how much we do not know until in future years we count the value of the industry in eight or nine figures. But remembering that the first failure was because there was no market for the mohair and no factory in our country, we must not forget the debt the industry owes to the Sanford Mills, which are the pioneers in the use of

Association distinguish between thoroughbreds and grades and insist upon the use of its designations. Now is the time to do this; a few years hence the industry will be so large—so widely disseminated—that efforts toward that end will be useless.

The burden of my remarks last year was the production of mohair, in order to meet the requirements of the manufacturers. You do not need to have that idea urged upon you now, for you know the value of good mohair. I desire to say this much, however, that we must not be content with less than the best product of the world. We have the goats, the conditions, and the men, and we shall produce the best.

THINGS TO REMEMBER.—And while we are striving for perfection in the mohair let us not neglect the constitution of the animal. Size and constitution are not everything, but they are much. A small, delicate goat can not grow or carry a large fleece, and, besides, it is an easy prey to disease. The statement that the goat is the hardiest animal in the world is altogether too sweeping. Because he has life he dies, and sometimes with some Angoras death comes apparently very easy. I have seen many goats five years old or over which would not weigh, when in good condition, over fifty pounds. This is too small, and it is due to unintelligent breeding. I am not advocating the largest animal that may be produced, but the largest animal that can produce the best mohair and at the same time possess a good constitution.

We must not falter in our claims for the Angora as brushwood destroyers. Too much has not been claimed for them in this respect, but there are many who look upon these claims as great exaggerations. So long as we have—as we do have at this time—millions of acres of land covered with brush, which, when cleared, will become by natural processes, the best of pasture, just so long will there be a demand for the goat to eat it. This is so because the goat will do better than a man can and at the same time save the owner from \$10 to \$50 an acre. Credit the animal with this work; credit him also with a four-pound fleece, with \$2.30 per year fertilizer produced, with his proportion of the annual increase of the flock, and charge him with his first cost and a small amount of feed in winter, then we have an idea of his worth upon brush land. Fences and sheds should be for permanent use and so not charged against the goats.

The prejudice which was a few years ago so strong against goat meat is disappearing, but it is still prevalent to some extent. This Association should never cease to teach the palatability and wholesomeness of Angora venison. Everybody in the United States must know it is good and be as ready to eat it as mutton. Men who contemplate the placing of large flocks of Angoras in a new section take this matter seriously into consideration, for they know there will be many wethers for which a market must be found. Whoever is in reach of the large packing houses has no difficulty in disposing of his wethers, but the matter becomes important to one in a new section and far from the large markets. When all prejudice against Angora venison is removed, the disposition of the wethers will no longer be a problem.

We do not praise the virtues of mohair goods in order to assist the manufacturers, but to increase the consumption of raw mohair. We believe the people of this country, who are so highly prosperous and have money with which to buy good goods, will be glad to know more about the beauty and durability of the fleece of the Angora goat. Let us do what we can to free it from the whims of fashion and make it a staple article, as much as wool or cotton, if possible. Do not forget that the low range of prices of mohair last year was due to the dictates of fashion. It is not within our power to do away with fashion, but it is within our power to do much toward making mohair goods fashionable all the time. We owe this sort of effort to the industry which we have established.

THE DAIRY.

Investigation of Methods of Milking.

TO THE EDITOR:—Under separate cover we are sending you an advance copy of Bulletin No. 96 of this station, entitled "Investigations of Methods of Milking," embracing studies on this subject by our Professor Woll. A summary is given which you may wish to present to the readers of your paper. You may say to them that copies of the bulletin will be sent upon request to any one enclosing a 2-cent stamp to pay expense of mailing, addressing "Agricultural Experiment Station, Madison, Wis."—W. A. HENRY, Director.

The following is the summary of the investigations in the bulletin to which Professor Henry alludes, and which is worth the careful attention of all our dairy readers:

1. The milking experiments conducted by the writer were made partly with cows in our University herd, partly with cows in twelve different Wisconsin dairy herds. The aim in all cases was to ascertain the gain in the production of milk and butter fat obtained by a system of manipulations of the udder after the regular milking was finished (Hegelund method). Where

the regular milker did not milk clean the gain obtained by clean milking, together with manipulation of the udder, was ascertained. The plan of the experiments was, therefore, to show the character of the work done by the different milkers.

2. In our University herd the average daily production of milk from twenty-four cows was increased by 4.5% by means of the manipulation method, and the production of fat was increased by 9.2% (range 3.0%–30.2% for individual cows), as the result of a milking experiment continued for four weeks, the average gain in milk being 1 pound and in fat 0.9 pound per head per day.

3. A similar average increase in production was obtained for the twelve dairy herds tested, viz., a gain of 1.08 pound in the daily production of milk per cow and .1 pound of fat. The results obtained in this investigation, extending over a period of four months, with cows in all stages of lactation, indicate that this gain is maintained through the whole period of lactation. An increase in the daily production of butter fat per cow of .1 pound for the million cows in the State would mean an annual gain of 30,000,000 pounds of butter fat, if the cows give milk 300 days in the year. The value of this increase to the dairy industry of the State would be about \$6,000,000, on the basis of a valuation of 20 cents a pound for butter fat, a figure considerably below average Elgin prices.

4. The largest amount of milk obtained from a cow by the manipulation method, after the regular milking was done, was 5.5 pounds per day and the lowest .20 pound. The corresponding figures for fat production were .64 and .02 pound. The former figure is considerably above the average total daily production of cows in this or other States.

5. The greater portions of the gains obtained came through lack of care on the part of the regular milker, as the cows were not milked perfectly clean. But even in herds where the milkers did their work well there were always one or more cows which gave an increase of nearly 1 pound of milk and .1 pound of butter fat by the manipulation method.

6. The milk obtained by the manipulation method is similar in composition to that of "strippings." On the average for all herds it contained 10.32% fat and was found to be about two and one-half times richer than the ordinary milk. The highest per cent of fat found in the after-milking from any one cow was 23.0, and from any herd 14.41.

7. The difference in the work done by different milkers is brought out strongly by the results of the work done. In several cases one milker did his work so much better than the others in the same herd as to be worth nearly \$10 a month more to the owner, on account of the larger yields of milk and butter fat which he obtained from the cows milked by him.

8. The results obtained in this investigation suggest that a thorough system of milking is a foundation requirement in successful dairying. For, aside from directly increasing the production of milk and fat from the cows, exhaustive milking will be likely to maintain a maximum flow of milk throughout the lactation period and to permanently develop the dairy qualities of both the dam and her offspring.

FORESTRY.

Forestry in Germany.

Mr. John E. Kehl, U. S. Consul at Stettin, sends the following note to the State Department:

In the preservation, development and economical management of forests, the Germans, perhaps, excel any other nation. The Government, as well as the people, recognize that forests have not only a commercial worth, but a national economic value of utmost importance. The German forests, as a rule, are free from weeds, undergrowth, washouts and dead and decayed wood. High stumps are a rarity; the trees are sawed about 6 to 12 inches from the ground, thereby adding to every log (of the first cut) 1 to 2 feet in length, compared with what the same tree would yield if cut on the American style. If our people would fell timber as the Germans do—as close as possible to the ground—it would save millions of feet of lumber per year.

In most cases, timber in Germany is cleared in large patches and not, as is too common with us, a tree here and the next one, possibly, 100 yards away, leaving the tops to rot. Here, the patch cut is cleared for plowing and cultivating purposes. Worn ground is used for setting out saplings; in many instances, these tracts are surrounded by a single wire fence, and at several places are marked with signboards bearing such words as "Schonung 1900," meaning "protected (by law) 1900," this being the year in which the trees were planted.

Imperial statistics for 1900 show that Germany had 34,569,926 acres of wood; in 1883, there were 34,353,748 acres; and in 1893, 34,473,296 acres. The figures for 1900 thus show an increase, as compared with 1883, of 216,178 acres.

Large forests are usually under the care of foresters—men who have made the matter a vocation. Germany has seven academies and five schools for the study of forestry. The general duties of a forester are:

1. To protect the forests against damage by persons in the way of stealing, cutting, or unwarranted trespassing.

2. To protect against the ravages of hares, deer, rabbits, insects or other animals; to prevent illegal hunting—acting, as it were, in the capacity of game wardens.

3. To cause the destruction of weeds and other injurious undergrowth.

4. To devise means against frost, fires, washouts, winds, etc.

5. To superintend the cutting and removing of wood.

THE APIARY.

The Bees and the Pear Blight.

From an address by F. E. BROWN, Secretary of the California Bee Keepers' Association, at the National Bee Keepers' Convention in Denver, Colorado.

A mass meeting of fruit growers and bee men was held at Hanford during the last days of February. At that meeting our committee agreed to clear up a certain district 2 miles square and move our bees 3 miles from that line, as a matter of test. In our resolution the summer before we had agreed to move them clear out of the district, away from the pear trees, but now, for want of time, as it was within a few days of the time when the pear trees would bloom, we agreed to move out of this one district only. This was done, but before this meeting adjourned the bee men asked the pear men to see that they moved their bees.

A MOVEMENT WHICH HALTED.—There are some of our pear growers who have a few bees, and some other fruit men have bees, and farmers have bees, and there are bees in the fence corners—bees all around. We did not want to be responsible for the moving of the bees which belonged to the fruit men. We left that to the fruit men's committee, and this the fruit men's committee agreed to do.

After the meeting adjourned we went to work moving our bees, and the Central California Bee Keepers' Association moved every bee that belonged to them, and moved them the distance they agreed to move them, 3 miles from that line, clearing up a territory 2 miles square right in the heart of the pear blight district.

On visiting the pear trees after they came in bloom there were bees all over the trees, very nearly as numerous as ever before, and, on coming to investigate, the fruit men still had their bees; men who had pear trees upon their ranches—quite good-sized orchards—had bees, and so the test was spoiled.

I believe that the bee men of central California have done all that they could do in respect to this matter. They desired to make a test of the matter, but they did not believe that the bees were responsible for the spread of the blight at that time. The test was spoiled, but the trees were seemingly infected.

HOW THE BLIGHT ACTS.—In the winter time our pear growers prune down their trees quite closely, pruning off all signs of dead wood and blight, leaving the tree in the spring to come out new. You would scarcely see that there had been any blight except that the top is not quite so large. That was the case this time. The trees were in blossom, the bees were working upon them two weeks, and there was not a blight to be seen, and people thought for some reason there was not going to be a blight. But, seemingly, all at once, like a thunder clap from a clear sky, the trees were all wilted, the blossoms just appeared to topple down, bow down their heads under the blight. Nearly everything in sight was blighted, and it took it all at once. That is something that we as bee men do not understand, or how it is so effected, but there was no blight seen upon the trees anywhere except in the blossom. I investigated it myself. I was on the ground, went among the largest orchards and saw it with my own eyes. That blight attacked the trees directly in the blossom. About a week later than this the leaves began to shoot out among the blighted blossoms, and then the blight ran down the little stem that held the blossom and would affect the leaf and limbs, going on down the limbs.

NETS WHICH FAILED.—About the time that we had our joint meeting of fruit and bee men regarding the moving out of the bees the board of supervisors of our county appropriated money by means of which certain trees might be put under mosquito netting to make a test that way. After we had seen that the other test had failed we thought quite likely that we had a test under this head that would prove beneficial. I visited these trees and saw that they were not as reported. The board of horticulture published an article in our county paper stating that the trees which were under mosquito netting were unhurt by the blight, while all the trees around them were blighted, stating, further, that the fruit on these trees that were under this protection was good, the trees were full of fruit, while all around them was otherwise.

I immediately went to see these orchards and examined these trees under mosquito netting, and I

found that they were much blighted. I found that they had very little fruit, but I found that there was more blight existing on the trees outside the mosquito netting than under it. But on examining those trees later in the season, after the pears were perhaps half grown, I found that there were no more pears upon those trees than the trees around them. This experiment was conducted in the Charles Downing orchard, the largest pear orchard in the State, but to-day that orchard is half dead, and this winter, perhaps, three-quarters of that orchard will be dug up. This is only one. The pear growers claim that they lose enormous sums of money. There is one grower who claims he loses at least \$10,000 a year from the loss of pears alone. That was in the year 1901. If he lost \$10,000 from the loss of pears alone in 1901, this year, if his statement is correct, he has lost three times that amount. But whether it is or is not correct, the pear interests in our county are large and extensive. There are one or two pear men who have stated that they lose pears enough in a single year to buy up the whole bee industry of the State. That is not correct. All the pears that are grown in Kings county or central California, perhaps, would not amount to the honey industry of the State. But of the two industries growing side by

side in Kings county, the pear industry is the greater, or was before the blight struck it.

THE PRESENT CONDITION.—The question as it stands to-day is that the board of supervisors will probably do nothing. However, they are electing a new board at this present election. But we fear that the fruit growers will place notices upon their fences: "Poison about. Take care of your bees." We expect this will be done; in fact, it has been done—that is, the poison has been put out and bees have been poisoned, but the notices have not yet been posted.

APPEAL TO THE NATIONAL CONVENTION.—The way the pear blight is now existing and spreading, consuming the orchards, it will not be two years before there will not be a pear tree left of the Bartlett variety. In view of this, our bee keepers in convention held the 24th of August last passed a resolution and gave it to me to bring to this convention, which I have and will read, as follows:

Whereas, There is in this vicinity an existing malady known as pear blight, which is fast killing the trees and destroying the fruit crops thereby; and

Whereas, The bee is accused of spreading said blight, and is alleged to be responsible to a great extent for the cause of failure in the pear crop, which loss is placed as high as \$10,000 per annum for a single grower, and said

growers have made repeated efforts to get the county officials to pass certain ordinances prohibiting the keeping of bees where pears are grown; and

Whereas, There are threats of wholesale poisoning of the innocent bee, and said threats have, in a measure, been carried out, to the damage of some of our members; and

Whereas, The Central California Bee Keepers' Association's members are members of the National Association, and are very desirous that the mother association take up the matter, and, in case there is further trouble, that the National Association will give us the advice and protection that is usually done in cases like this; therefore be it

Resolved, That we pass on this preamble and resolution to the National Association assembled at Denver, Colorado, asking them to consider its merits and to discuss its contents, and that they take up the matter and give us the protection herein asked for.

At the close of Mr. Brown's address the National Convention appointed a committee to consider the matter and make recommendations.

HON. H. M. LARUE, near Davisville, has just finished cutting his fifth crop of alfalfa for this year, and says the plant has netted him \$25 an acre.

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Agricultural Review.

ALAMEDA.

LIVERMORE ALMONDS.—Four carloads have been shipped from this station this season.

GOOD WELL.—In a well recently bored by Fred Brenzel for Mr. Striver, near Pleasanton, the operations of a steam pump failed to lower the water.

ELLSWORTH DRIERS' OUTPUT.—Niles Herald: E. A. Ellsworth has shipped fifty car loads of dried fruit from his drier to date for this season and has about thirty car loads yet for shipment, aggregating about 2,132,320 pounds for the season. There were ten car loads for export, twenty-one for the Eastern trade and about fifteen local.

BUTTE.

CHICO PRUNES BURNED.—Prune evaporating house and machinery on the Bidwell ranch destroyed by fire; also 1200 trays of prunes; loss estimated at \$4500. About 200 tons of prunes were awaiting evaporation. It is too late for rebuilding this season.

KINDS OF SEED WHEAT.—Gridley Herald: Among those who had the largest yields per acre last year each man said that he had planted Little Club wheat. Those who sent to Utah and other States for wheat were disappointed, particularly in Salt Lake Club, it proving not at all satisfactory.

BIG HORSES.—Chico Enterprise: In a band of 150 head of horses belonging to the McCloud River Lumber Co., en route to their winter range near Marysville, there are over 100 which weigh over 1800 pounds each.

CONTRA COSTA.

TULE FIRES.—Brentwood Enterprise: Fires have again been raging in the tule land on the Veale ranch.

FRESNO.

GRAPE YIELDS.—Republican: Eleven acres owned by T. J. Alexander of Temperance colony this year produced 31½ tons of fine raisins, which brought \$2812.50, and 30 tons green grapes at \$345, total \$3157.50. —Democrat: The Earl Fruit Co. reports the sale in the East of a carload of Emperor grapes, from the Minnewawa vineyard, for \$2744. Four other carloads sold previously each returned over \$2000.

NEVADA CATTLE.—Herald: Seven hundred cattle—150 cows and the rest steers—consigned to Joseph Well from Nevada are being pastured in the Kings river bottom. They are mostly Durham cattle, and stockmen say they are the best ever seen here.

EUROPEAN MARKETING CONNECTION FOR FRUIT.—Selma Enterprise: November 8 Manager J. M. Moore of the Rochdale Wholesale Co. at San Francisco told a meeting of fruit growers here that he had a plan for disposing of an immense bulk of our surplus dried fruits. The managers of the Wholesale Co-operative Society of England assured Prof. Fowler their organization would advance all the capital required by California societies to handle the entire fruit crop of the State. The organization has a large surplus capital which it is willing to loan for the purpose of building co-operative packing houses, etc. In return it would like to handle the surplus crop of the California fruit growers, selling to the European consumer.

COURT has restrained the Droge Fruit Co., at George C. Roeding's request, from using "Calif-Smyrna" as a brand name for packed figs, on account of infringement of copyright.

INYO.

ARTESIAN IRRIGATION.—Wells sunk by the Inyo Development Co. for its soda plant have shown the possibility of artesian irrigation to some extent in Inyo county. The company sunk a 6-inch pipe down 160 feet, and through that 200 gallons per minute are steadily flowing, also a 4-inch pipe to the depth of 423 feet, and through this flows 250 gallons per minute of fresh, pure water, rising 35 feet above the ground.

KINGS.

ORCHARD AND VINEYARD YIELD.—The Horticultural Commissioners say the yield was one-third more than any previous year and good quality. Vines and trees are doing very well. Results of summer pruning are being closely watched for.

FINE COLTS.—Sentinel: A. W. Lane shipped to C. C. Griffith at Sanger a span of English Shire colts, three years old, for which he received \$275 in coin.

BUENA VISTA CANAL & WATER CO. has filed articles of incorporation; 5000 shares, providing for \$25,000 capital. Di-

rectors are J. F. Pryor, J. D. Hefton, F. R. Hight, A. Goldberg and R. Mills; office, Hanford.

TUMBLEWEED FIRE.—The big fire which was seen away down south Friday night was a tumbleweed fire near Tulare lake.

PERSIMMONS CROP.—P. Scazighini of Grangeville delivered to N. Weisbaum from two Japanese persimmon trees about \$30 worth of fruit, to go East in 20-pound boxes.

LOS ANGELES.

NEW PUMP CYLINDER.—S. M. Fulton and others, under the superintendency of Fairbanks, Morse & Co., have invented a deep-well pump cylinder that raised muddy water, full of sand, 300 feet, and cleared itself. The new cylinder is so satisfactory that the firm named have ordered them in large quantities from the Pomona Mfg. Co.

MUTUAL TELEPHONE CO.—Progress: Pomona has a co-operative telephone company composed of farmers. Orders have been placed for much of the material.

INTO CATTLE AGAIN.—The Chino ranch will soon be restocked with cattle.

MENDOCINO.

NEW MILL.—The Northwestern Redwood Co.'s mill will be reconstructed soon, with a capacity of 65,000 feet a day, and be run day and night, at Willits.

MERCED.

WOOL SHIPMENTS.—Merced Star: Considerable wool has been shipped by the Southern Pacific lately—the last of the fall clip.

DOS PALOS PROGRESS.—Correspondence Star: The skimming station is paying a cent a pound for average milk now. Numerous hand cream separators are being used here, the product of which is sent to San Francisco. —Reports of ten tons of alfalfa hay to the acre for the season are frequently made. —Seventeen new buildings have been built in the vicinity of the Center during the past year.

BOER COLONIES.—Sun: A number of Boer colonies will soon be started at various points in the San Joaquin valley, as a result of the recent visit of Gen. Pearson.

SACRAMENTO.

FOLSOM GRAPES.—The Earl Fruit Co. shipped thirty-five carloads of grapes to Eastern markets and thirteen carloads were sent out by the Fresh Fruit Exchange, making a total output more than that of last year. Owing to lack of help quite a part of the crop went to waste. It is said that the average price per car received for Folsom grapes was about \$1500.

SAN BERNARDINO.

THE MOUNTAIN PEAKS are mantled with "the beautiful."

ELECTRIC AMALGAMATION.—The Edison Electric Co., Redlands Electric Light & Power Co., Pasadena Electric Light & Power Co., Santa Ana Gas & Electric Co., and other subsidiary companies have been amalgamated into the Edison Electric Co. and capitalized at \$10,000,000.

SAN DIEGO.

A FARMERS' CLUB has been formed at San Diego.

TUNNEL TO CAVES.—A tunnel 120 feet long is to be run to the sea shore caves of La Jolla.

ON SHARES.—Vineyard is being planted that way about Escondido.

LUTHERAN COLONY.—German Lutherans, in colony, have taken a full section at Imperial.

MORE WINE.—San Diego Union Fallbrook Correspondence: Many of our ranchers are seriously contemplating the planting of wine grapes. It is known that this crop will do well on the Fallbrook hills.

LAND AT IMPERIAL.—San Diego Sun: Out of a total of something like 400,000 acres which is available for irrigation, 160,000 has been filed on. New entries are being made daily.

SAN JOAQUIN.

ABANDONMENT OF SUGAR BEETS.—Lodi Sentinel: The attempt to raise sugar beets in the New Hope region has been abandoned, probably for good, notwithstanding the fact that Mr. Thornton grew beets that yielded as high in sugar as 22%. The first year a drouth ruined the crop; the second the land was flooded by the breaking of levees; and the third the seed had to be sown too late to produce a good yield. These three attempts have discouraged farmers.

SUGAR BEETS AND BEANS.—Livermore Herald: On the Burke & Naglee tract near Bethany, where nine Livermore men are employed, 7000 acres will be planted to sugar beets, 1900 acres to grain and 6000 to beans.

SAN LUIS OBISPO.

GOOD GRAZING.—Tribune: Around Cambria and Cayucas, butter making sections, the last rain makes prospect of a wonderfully good season.

SYCAMORE SPRINGS is having \$50,000 put on in improvements and advertising, and the Halcyon Health Co., with \$75,000 reported capital, will erect and advertise a modern sanitarium near Oceano. San Luis Obispo county as a whole is a natural sanitarium.

AN ABALONE CANNERY is to be put up at Port Harford and a clam cannery at Pismo beach.

SANTA BARBARA.

LAKE RESERVOIR.—Lompoc Record: The next thirty days will see the great lake-like reservoir filled with pure spring water; and a few days thereafter will see the water generally diffused throughout Lompoc.

LOMPOC APPLES KEEP IMPROVING with the low temperature and humid atmosphere. They are said to be positively wormless. If irrigation is approved 5000 acres will go into winter apples within the next five years.

THE MOUNTAIN ROAD, via the oil wells from Lompoc to Santa Maria, will soon be in fine condition to travel. It is shorter, and a fine scenic way.

SANTA CLARA.

AT SAN MARTIN.—Gilroy Advocate: There are many signs of improvement; new vineyards planted and new houses going up on all sides.

HIGH-PRICED WOOD.—Herald: Wood is bringing close to record-breaking prices in San Jose this fall, and the indications are that it may go higher. Most of the live oak wood for San Jose comes from San Luis Obispo county now.

SANTA CRUZ.

PAJARO VALLEY CORN.—Pajaronian: Smith Bros. harvested 1000 sacks of fine corn on their place near Aromas this season.

APPLE SEASON ENDING.—The Earl Fruit Co. shipped out its last car of pears for the season November 10, and forwarded its last Newtons this week. The quantity of apples unpacked is insignificant. No difficulty will be experienced in disposing of the entire crop at fair prices.

SOLANO.

LEVEE WORK.—Rio Vista News: Three dredgers are at work on the levee, a trench through the center of which is being excavated and repacked.

CEMENT.—Suisun Republican: The mills are manufacturing 600 barrels of cement daily and there is a brisk demand for the entire output; 125 men are employed.

TELEPHONE IMPROVEMENTS.—An attempt is to be made to insulate the Butt-in barbed wire line with bicycle tire, so that it will work in wet weather.

SONOMA.

OILED ROADS.—Press-Democrat: The supervisors expect to experiment with oil in some parts of the county this year.

IN MANY STATES.—No table grapes will be shipped from the vineyards at Fountaingrove, notwithstanding inquiries from many States in the East, and much loss here.

WINE OUTPUTS.—Petaluma Courier: Joshua Chauvet has made 200,000 gallons of wine and 100,000 gallons of brandy at his Glen Ellen Winery, and in his Santa Rosa winery 300,000 gallons. The Siml winery output will reach over 3,000,000 gallons.

GREEN HILLS.—Santa Rosa Press-Democrat: The hills are putting on a fresh dress of green. But for the falling leaves it could be imagined that spring was here.

The olive yield is good.

HORTICULTURAL TRANSFORMATION.—The large peach and prune orchard at Oakmead, near Fulton, recently purchased by Samuel Talmadge, is being set out with hop vines.

WINE GRAPES AND PRICES.—The wine season is over and the vintage this year is larger than ever before. The price paid for grapes ranged from \$30 to \$34 and the crop was very large.

PIONEER DEAD.—Amza Bushnell, pioneer citizen and hop grower, has passed away at his home near Sebastopol. He had the reputation of being the first man to plant hops in Sonoma county, forty-three years ago.

SONOMA COAL.—Two tons of Sonoma mountain coal were Wednesday shipped to Minneapolis by T. W. Lawrence, lessee of the Mott coal mine.

DRIED FRUIT.—R. McKinley of Ukiah shipped to Felix Cohen of San Francisco a haunch of venison, billed as fruit. Mc-

Kinley paid a fine of \$40 Saturday for violation of the game law.

POTATO DAMAGE.—In the vicinity of Bloomfield and Bodega, on the coast, potatoes are rotting in the ground. Potatoes are the principal crop in that section.

CONTRACT SUIT.—Peterson Bros. of Windsor have sued Chaix & Bernard, wine makers, operating the Metzger winery, for \$8437 for grapes alleged to have been contracted and refused and unpaid for.

TOBACCO.—Cloverdale's tobacco factory is being prepared to take care of this season's crop.

STANISLAUS.

SUGAR BEET FACTORY.—Modesto is negotiating for one in answer to inquiries.

SUTTER.

FARMING TULE LAND.—John Markley of Geyserville and Sacramento business men have bought 7240 acres of the driest tule land in District No. 70, just north of Tisdale, for about \$40,000, and will put in beans, buckwheat, broom-corn, barley and similar crops. Mr. Markley will take charge in person. The Sutter Independent thinks that actual cultivation of the land bought is not the object, but that there is a movement on to reclaim more. A correspondent says that good fortune is to be brought about by four weirs on the Sacramento river.

RECLAMATION OPPOSED.—A plan on foot to form a new reclamation district of 4000 acres near Knight's Landing, on the Sacramento river, in Yolo county, is opposed before the Supervisors by Judge J. W. Snowball, D. N. Hershey and other large land owners.

SUTTER OLIVES.—Farmer: The crop is reported light. The Clark pickling plant has commenced operations on Sutter, Yuba and Butte crops.

TULARE.

QUICK SALE.—Orosi Offer: O. C. Goodin, who only a few weeks ago cut 160 acres of his land, 3 miles south of Orosi, into colony lots, had sold all but one ten-acre tract of it two weeks ago.

LAND PRICES.—Acre prices have gone up \$10 to \$20 over what they were seven months ago, and there is a prospect that they will go still higher. The demand for colony lots is as strong as ever, but small holdings are not so easily found. Several banks holding land in Alta irrigation district are holding it in large bodies for a raise. They want to sell in 160 to 320 acre tracts.

The wineries at Reedley and Fresno have been unable to handle grapes as fast as they are shipped in.

GROWING TELEPHONE COMPANY.—Visalia Delta: The People's Telephone Co., at first only a wire fence affair, is now one of the substantial institutions of Tulare county.

ORANGE YIELD.—Alta Advocate: It is said that D. Reinheimer's little orange grove of a trifle over four acres at Orosi will produce 1000 boxes of fruit this year. Oranges are the coming crop but a few miles from Orosi.

JUDGMENT AFFIRMED.—Judge Wallace affirmed the decision of Justice Lillis finding Horticultural Commissioner S. A. Boggs of Lindsay and A. G. Simms \$30 each for burning 100 acres of land belonging to G. S. Berry in order to protect the orchard of a Mr. Postlethwaite from grasshoppers in alleged pestiferous numbers last summer.

VENTURA.

PLANTING SUGAR BEETS ALREADY.—Oxnard Courier: If sufficient wet weather is received there will be beets ready to harvest in May. The Patterson ranch company has planted a piece of low land of fifty acres and will probably put in more. They have been turning over their land with the steam plows since the beets began to be harvested, and have many hundred acres plowed.

YUBA.

SALMON TROUT are going up the Yuba in unusual quantities this year.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Hemorrhoids from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

To My Mother.

Thou type of noblest Womanhood!
Thou who in manhood's evil day,
As by the couch of infancy,
Still faithful stood;
Unfaltering, and with purpose strong,
Rebuking all the hosts of wrong,
With "love is more than gift of song,"
And "virtue is the highest good."

Oh would these wildwood flowers for thee
Were robed in beauty's charm and bloom
Made rich with every rare perfume
Of Poesy;
With every grace of heart and mind,
With woman in all reverence shrined;
In part repaying so in kind
A debt as boundless as the sea.

—Benjamin Hathaway.

Night.

She glides above the weary world,
That royal maid whom men call Night,
Her fair face framed in ebony locks;
Her deep eyes gleam with dusky light.

A dark-blue mantel, gemmed with stars,
Enfolds her in its mystic veil;
Above her cold, calm brows are bound
White poppy blossoms, dim and pale.

Her voice is thrilling—with the strange
Unfathomed music of the stars,
That swells beyond the bounds of space
And echoes up to heav'n's wide bars.

About her floats a perfume sweet
As night winds over flow'rs in June;
The diadem upon her brow
Is radiant as the summer moon.

She bends to lay her cool soft hand
On weary brows that throbbled all day;
She stills their aching with a touch,
And smooths the lines of care away.

To weary limbs, to burning heart,
She brings the blessed gift of sleep;
She whispers peace to anxious ears,
And softly veils the eyes that weep.

—Maud E. Sargent.

Somebody's Dinner.

A family council was held in suite G of the Balmoral flats, occupied by Mrs. Burgess and her daughters, Gladys and Mae. It was held to settle whether there should be turkey for dinner on Thanksgiving day or whether it would not be wiser to express gratitude for blessings vouchsafed through the year by eating a neat little roast loin of pork with onion dressing or something of that sort, and perhaps a pumpkin pie from the bakery round the corner. It was almost a foregone conclusion in favor of the pork, but the Burgesses very properly felt that such a departure from established custom should not be made without at least the formality of deliberation.

"The fact of the matter is that we can't afford it," said Gladys, who was the manager of the family. "Turkey will run from 10 to 13 cents a pound, and any kind of one will weigh ten pounds. That will run it up to a dollar or a dollar and a half just for turkey alone, and if Mae doesn't get her new coat this week she's not likely to get it this winter."

"I don't care much about turkey, anyway," said Mae, philosophically.

"It doesn't seem right not to have turkey Thanksgiving," said Mrs. Burgess, "but I guess I can stand it if you girls can."

In accordance with the final determination, Mae's coat was bought, and the day before Thanksgiving Gladys, on her way to the box factory, stopped in at the meat market and ordered the pork, resisting the market man's turkey blandishments with heroic fortitude.

When she returned home that night she found Mae preparing the supper alone, and on the kitchen table in a basket, its magnificent purple legs and pale, wattled head and neck dangling from opposite edges, was a very sultan of turkeys, a bird that would have rejoiced the hearts of a family party of fourteen. Nestling against the plump breast of the turkey was a goodly

mess of pork sausage, balanced on the other side by two fat paper packages. Gladys stood and gasped.

"You needn't get excited," remarked Mae. "It isn't ours unless you drew on your private bank account to surprise us."

"Who brought it? Whose is it? What is it doing here?" asked Gladys, as she unpinned her hat.

"I can't tell you a thing about it," replied her sister. "It was here when I came. The key was under the ice-box on the back porch, just where ma always leaves it, but the door was unlocked. I knew ma was over to Mrs. Bennaker's, so that kind of scares me, and then when I walked in there was that turkey. That's lard in that package and cranberries in the other. Now, who do you suppose could have left it?"

"Maybe ma will know when she comes in."

"No, I was going to tell you. I saw the janitor, and he said ma told him somebody brought the turkey while she was out, and she locked the door behind her, too; so how they got in was a mystery to her, and she told the janitor she was going out again and where the key was, so that if anybody called to claim the turkey they could get it."

"Perhaps some one has left it on purpose, like they do in stories," hazarded Gladys.

"If they had," observed Mae, wisely, "there would have been a few more things in the basket—apples and nuts and a gallon jug of sweet cider and a box of candies. The lard wouldn't be in the basket if that was how it came here."

"Well, you go and get a loaf of cream bread and I'll get the supper on," said Gladys. "If anybody comes and proves property I'll let them have their turkey, but it's about as aggravating a thing as ever I knew of."

Mae went for the bread and Gladys busied herself with the teapot, but the turkey weighed on her mind to such an extent that she resolved to go and see the janitor about it. In spite of Mae's ingenious reasoning she was not without hope that the turkey might have been left by some mysterious philanthropist—possibly a long-lost, bearded and bronzed relative who had accumulated a vast fortune in the Klondike and was searching for kith and kin upon whom to lavish his wealth. "Then," thought Gladys, in a hazy sort of way, "there won't be any need of me working in the box factory any more."

The janitor said that he knew nothing about it, although he had asked several of the tenants whether they had not ordered turkey. They'll surely kick me if they think one ought to have come," he concluded with reassuring pessimism. "They'd be only too glad of a chance to kick. You needn't worry about it being left on your hands."

Gladys did not say that it was the prospect of having it taken off her hands that was worrying her. She went slowly upstairs again, and, entering the little kitchen, looked at the table and staggered back with a scream.

The turkey was gone!

Gone and left no trace behind. Gone—basket, sausages, lard and cranberries and all. The door was closed. Gladys opened it and ran out on the porch. There was not a soul in sight anywhere along the alley. She knocked on Mrs. Williams' door which opened on the same porch. Mrs. Williams came and said she had not "heered a livin' mortal thing." She was greatly worried when Gladys told her the story of the turkey, and said it was as mysterious a thing as ever she "heered tell of." By this time Mae came back with the bread and was informed of the disappearance. She bore it very well, but the glamour of her new coat was on her yet.

The two girls were about to sit down to their supper when there came a rapping at the door. "Here comes dear Uncle Ben from Cape Nome," exclaimed Gladys as she rose to open it.

It proved to be a small red-headed boy, with two front teeth missing, which gave him an engaging lisp.

"Murver want ter know if you've got our turkey—the janitor thays you have," he said.

"The janitor's mistaken," snapped Mae, but Gladys stopped her.

"We haven't got your turkey," she said. "We had a turkey, but we haven't got it now—somebody has taken it away again."

"The janitor thaid you had it, an' my ma want ter know if you won't pleathe thend it back to her."

"You tell your ma—" began Mae.

"Now, Mae!" said the elder sister, "I wish you would keep still and let me talk. Don't you understand?" she continued, addressing the boy. "Somebody left a turkey here by mistake and then came and took it away again. You understand that, don't you?"

Apparently he did not, for he looked blankly at the girl and then repeated: "The janitor thays that you've got our turkey, murver want—"

"I guess I'd better go up with him," said Gladys.

She went with the boy to the flat above, at the west end of the building, and the boy burst in before her and brought a surly-looking man in his shirtsleeves to the door. The man received her explanation silently and with an air of suspicion. He said it was "a darned funny thing," the fun of it did not seem to appeal to him. "Well," he said, at last, "Mrs. Tunning has jest gone down to your flat; you missed her coming up the back way. I guess you'd better see her about it."

"The janitor thaid they'd got our turkey, pa," said the boy, as his parent shut the door, with an air of saying that for his part he disapproved of any compromise in the matter.

Gladys returned to her kitchen in a state of mind, and there found Mae, pale and wrathful, and the mother of the red-headed boy.

"I don't understand it," said the woman, unpleasantly.

"I didn't expect you could," returned Mae, with her chin in the air. "I don't understand it myself."

"Why anybody should come and leave the turkey and not say anything to anybody about it and then come and take it away again without a word is more than I can understand," pursued Mrs. Tunning, looking steadfastly at Gladys.

"I'm sorry," Gladys.

"So am I," said Mrs. Tunning, "but being sorry don't help nobody."

"Well," said the irrepressible Mae, "I don't see that we can do anything more for you, and now if you'll excuse us we'll eat our supper, and if anybody sends us your turkey again we'll let you know."

She held the kitchen door open as she spoke, and Mrs. Tunning, with a short, sarcastic laugh and a remark about "nice neighbors," swept indignantly out.

"Why, Mae!" expostulated Gladys, "you ought to be ashamed of yourself. What do you suppose ma would say if she were here?"

"Ashamed of myself!" echoed Mae, "I guess we don't have to take everything. Does she think we are hiding her old turkey? I know what ma would have done. She'd have sailed in and slapped the insulting old thing, that's what ma'd have done. Now, who is that, do you suppose?"

It was the Spalding girl from the other side of the court. When Gladys opened the door she said: "Oh, good-evening! The janitor told us that you'd—"

"Got your turkey?" said Gladys, "No, we haven't. We've been having quite a little trouble over a turkey that some one left here." Then she told all about it.

"Did you say somebody came in while the door was locked?" asked the Spalding girl. "And didn't they take anything else but just that turkey? Did they take your turkey, too?"

"We didn't have one," said Gladys, blushing.

"Ours hasn't come yet," said Mae, unblushingly.

The Spalding girl went away after sniffing incredulously and left the Burgesses girls on the verge of tears. "I wish ma was here," said Gladys, fervently. "I'd go out if she was. I'm

going down to see the janitor and tell him—"

She was interrupted by a ring from the front door. "There's ma now," said Mae, jumping up. "I'll go open the door, Gladys."

She ran and opened the door, and was confronted by a young man whom she recognized as a neighbor who had seemed to take particular notice of her when they passed each other in the street, or on the stairs of the building. Mae rather liked this young man's looks, and she had already decided that he was not "fresh," like most of the boys, although she had never spoken to him, basing her opinion on his different air. Even now she smiled quite graciously upon him.

"I beg your pardon," said this man, "but the janitor told me—"

He got no further, for Mae said, "We haven't got it," and slammed the door in his face. When she got back into the kitchen she began to cry.

"I wouldn't mind so much, if I was you," said Gladys after a little. "The thing will get straightened out after awhile."

"But isn't it miserable!" exclaimed Mae, lifting her pretty, tear-stained and flushed face from her arms. "Everybody seems to believe that we've gone to stealing turkeys. There! Now, that's another of them. You can go and get insulted this time."

This time, however, it happened to be a groceryman, who said his boy had misdelivered a turkey, a bunch of celery and half-peck of apples. He also had received his information from the janitor. When he learned that the turkey left at the Burgesses' was accompanied by lard and sausages he departed, apparently satisfied.

As soon as he had gone Gladys ran down to the janitor. "Please don't tell anybody else that we have got a turkey that doesn't belong to us," she said, with tears in her eyes. "We haven't, you know, and we are being pestered to death with people."

"That's all right about that," said the janitor. "I found out how that thing came about. It was Drewry's boy left the turkey in the first place. He said there wasn't no one in both times. He come back an' took it back to the store again becuz he'd forgot who owned it. I guess it's all right now though."

"Who did own it," asked Gladys, with a sigh of relief.

"Spaldings, across the court," said the janitor.

When Gladys got back she found that Mrs. Tunning's red-headed boy had been down again and had narrowly escaped assault and battery at Mae's hands. He had called, however, to say that his mother had got her turkey and was very sorry, whereupon Mae in the fullness of her heart gave him a doughnut and an apple.

"I guess our troubles are over now," said Gladys.

"There ain't any mistake about it, as far as I can see," said the expressman as he set the turkey down on the floor ten minutes later. "Miss Burgess, flat G, ain't it?"

"I'm not going to take it," said Gladys, obstinately. "I haven't ordered any turkey, and I won't be bothered with it, anyway."

"You can give it away after you've signed for it, as far as we care," said the expressman.

It proved to be a gift from the box factory, and when Mrs. Burgess came back she found her two daughters on the verge of hysterics.

The only trouble, as far as Miss Mae could see, was with the young man. She wondered what he could think of her conduct. She told her mother and sister that in cooking their turkey they laid themselves open to the suspicion of having wrongfully detained that of the Swaffield's—Swaffield being the name of the young man. But Gladys cheerily chopped the dressing and laughed at her. It happened, however, that Mae saw the young man before dinner. He looked very well in his best clothes, too. Mae thought he seemed a little afraid of her—also that it was her duty to make an apology.

"Did you get your turkey?" she asked.

"Sure," said the young man. "It's a-cookin' now."

"I'm sorry I spoke to you like that yesterday," said Mae, with downcast eyes.

"That's all right," said the young man, pleasantly. "I just came up because the janitor told me to tell you he had found out who owned the one that had been left at your flat."

Mae blushed. "I'm sorry," she said smiling, "but I had the toothache yesterday."—Farmers' Review.

Scientific Bed Making.

After the Thanksgiving dinner, and all the thankfulness of heart and life that sweetens it, we shall want to sleep well, and to that end nothing contributes more than a well made bed.

There's a science in bed making. That is to say, there is a proved knowledge of how to make a bed in order to make it comfortable. Putting aside the questions of the composition of the bed—whether it shall be hard or soft; what kind of a mattress; or how long it shall be aired—the putting together so that there may be secured the greatest amount of comfort for the occupant is all that will be considered.

The first thing, says Emma Churchman Hewitt, in a late issue of Collier's Weekly, is that the sheets shall be of good length. The lower sheet is the foundation of the comfort or discomfort of one's bed. The late Queen Victoria insisted on the lower sheet of her bed being sewed fast every day; but it can be kept in place by other means. The sheets should be a full half yard longer than the bed; but, be they so long or not, the bottom sheet must be tucked down well under at the top, even though the foot go scant. The tendency of the human body while in bed is to slip down toward the foot of the bed, naturally gradually working the sheet down with it if the latter be not absolutely secure at the top. Consequently, uncomfortable wrinkles. The sheet should also be wide enough to tuck under well at the sides; but this is not so important as having it tucked under at the top.

Having disposed of the bottom sheet, the top sheet goes next in place, wrong side up, so to bring the two smooth, ironed sides next the person of the occupant. Before placing any of the other covers, tuck the top sheet well under at the bottom, as the tendency is to pull the covers up around one's neck, and if they are not well secured, up they come in a trice, leaving the feet exposed.

Having secured the top sheet, put on the rest of the covers before tucking the upper sheet in at the sides and tuck them well down at the foot, without raising the mattress. The upper sheet being secure, the other covers will remain in place.

This accomplished, smooth up neatly, one cover at a time, tucking all down together at the sides, when the smoothing and the turning down have been done. Do not lift the mattress. Two bad effects will be produced if you do. First, your under sheet will be partially loosened; second, your under sheet will probably come loose all around when the covers are pulled down at night—a most irritating circumstance.

Keeping in mind the principle of tucking the sheets, one in at the top and the other at the bottom, and the further principle that the sick shall be uncovered as little as possible and the sheets put on one-half at a time while the patient is lying on the other side of the bed, the making of a bed comfortable for the sick will come easy.

Rescuer—Miss Properleigh, give me your hand.

Drowning Maiden (preparing to sink for the third time)—Oh, Mr. Hanley, this is so sudden; so unexpected! You will have to ask mamma!

"Pa," said the little mosquito, "what does 'perseverance' mean, anyway?"

"Perseverance, my child," replied the wise old insect, "means finding a hole in a wire screen."

DOMESTIC ECONOMY.

When the Gravy's on the Buckwheats.

When the gravy's on the buckwheats and the sausages are hot,
When the steam is floating upward from the shining coffee pot,
When the cook stirs up the batter that was set the night before,
And when the little Job and Clara smack their lips and yell for more,
Oh, it's then a man is always feeling pretty near his best—

If there isn't any trouble with the works beneath his vest—
And it is then he ought to humbly thank the Lord for what he's got,
When the gravy's on the buckwheats and the sausages are hot.

There's a fragrance that comes floating from the pancakes on the plate
That should nerve a man to action—make him strong for any fate—

There is joy, there's inspiration in the smears on Bessie's chin,
And it's good to see dear Willie as he scoops the sausage in,
And what sweeter music is there than the rasping, slapping sound
That the busy cook produces as she stirs the stuff around?

Oh, each precious, luscious mouthful quickly finds the proper spot
When the gravy's on the buckwheats and the sausages are hot.

—Chicago Record-Herald.

The Thanksgiving Dinner.

In planning for our Thanksgiving dinner, our minds naturally recur to the time-honored New England dishes as roast turkey, pumpkin pie, cranberry sauce, baked Indian pudding, etc., and our feast never seems quite complete without them. It is not always possible, however, to have turkey and some do not care for it. Roast goose, chicken, duck, pork or beef may be substituted for it. Another nice dish is "mock duck," or pork tenderloins baked with bread dressing flavored with herbs and onions. A menu that is semi-old-fashioned but usually liked is oyster soup, roast turkey with mashed potatoes, turnips, baked squash, pickles—sweet and sour—jellies; a salad, mince and pumpkin pie; fruit, nuts and coffee. It is well to have some kind of a light pudding for those who do not eat pie. If oysters cannot be procured, vegetable oysters may be substituted. Cream tomato is a favorite kind of soup.

Tomato Soup—Put the contents of a can of tomatoes on to boil in a pint of water. When the tomatoes are thoroughly cooked strain and add butter, the size of an egg, salt and pepper to taste and a quart of milk. When this comes to a boil, add a level tablespoon of soda. It is well to cook this in a farina kettle as the milk burns easily.

Vegetable oyster soup—Scrape the vegetable oysters and put them in water. Stew until tender, then press through a cylinder. Add a quart of milk and let the mixture come to a boil. When done season to taste and thicken with a little flour rubbed smooth in cold water or milk. Corn and potato soup may be made in the same way—cooking and rubbing through a colander.

To prepare the turkey for the oven, split the skin at the back of the neck, take out the neck bone, cut it close to the body. Draw the crop and the intestines; clean and wash thoroughly; fill both crop and stomach cavities with stuffing. Turn the neck skin down under the back; tie a string round and bring the two ends of the string over the wings and tie on the breast. When ready to bake put the bird in the roasting pan; add a little water, small quantities of chopped celery, carrots and onions, two cloves and a small bunch of parsley. Baste with the gravy every fifteen minutes. Cook in a moderately hot oven for about two and a half hours. The pressure behind the second joint of the wing will readily break the flesh when it is sufficiently cooked. Take off strings used in dressing before serving on the table. After the turkey has been taken out add a little water and flour to gravy left in pan; boil for a few minutes; strain and remove all

Not what is said of it, but
what it does, has made
the fame of the

Elgin Watch

and made 10,000,000 Elgins necessary to the world's work. Sold by every jeweler in the land; guaranteed by the greatest watch works.

ELGIN NATIONAL WATCH CO.

ELGIN, ILLINOIS.

grease that comes to the top. Serve in sauceboat.

Sweet potatoes—Pick out four or five large sweet potatoes and bake. When baked, halve lengthwise. Scoop out inside, mash, add salt, butter and cream to give them consistency of mashed potatoes and fill skins again. Cover with cracker meal; spread with a little butter and bake till brown. Serve hot.

Pumpkin pie—Pare and stew the pumpkin until it is soft and dry. It must be cooked slowly at the last to prevent burning. A little scorching will not injure it. Press through a colander and to one cup of sifted pumpkin add one egg, three tablespoons of molasses, one cup of sugar, one pinch of salt, one teaspoonful of ginger (or cinnamon) and one pint of milk. This will fill one pie on a large plate. Bake like a custard in a slow oven until the pie is a golden brown.

Mock mince pie—One-half cup of molasses, two-thirds cup of water, two-thirds cup of vinegar, one cup of sugar, one cup of breadcrumbs, one cup of chopped raisins, one tablespoon of cloves, one tablespoon cinnamon, one nutmeg, grated; butter size of egg; one-half cup chopped apples. Mix and put on stove to heat thoroughly, stir-rig often.

Mince pie—Mix well together one-half pound of chopped boiled beef tongue, one pound of chopped apples, one pound of currants, one-half pound of seeded raisins, three-fourths pound of Sultana raisins, one-half pound of citron, one ounce each of ground cinnamon, cloves, ginger, one-eighth ounce of ground mace, one pinch of grated nutmeg, one lemon, one orange, juice and grated rind; one-half pint of cream, one quart of cider, one pound of finely chopped suet, two tablespoonfuls of honey, one pinch of salt, one pinch of cayenne pepper. This will fill eight large pies. It should be allowed to stand for a week or two before using and will keep well if taken care of.

Boiled salad dressing—One teaspoon mustard dissolved in a little vinegar; three eggs well beaten; piece of butter size of an egg; pepper and salt to taste; one teacup of vinegar. Put on stove and boil till thick as mush, stirring constantly.

Mayonnaise dressing—Yolk of one egg, being careful not to have a bit of white; one-half teaspoon of mustard; pinch of cayenne, pepper and salt. Rub smoothly together; then add olive oil, drop by drop, till the dressing is thick as paste. Then dilute with vinegar till it is the consistency of a thick cream.

There are a number of nice salads if one does not wish to serve a heavy salad like chicken, lobster or salmon. Waldorf salad, composed of small pieces of celery, nuts and apple with dressing, is delicious. Cabbage salad is good and may be served in an attractive manner by hollowing out a small well-shaped cabbage and removing the outer leaves. The apple salad may be served in apples with the insides scooped out. Sweet potatoes may also be used in a salad. Boil and cut into small squares and cover with salad dressing.

Baked squash—Cut in small pieces to serve individually, bake with the rind on, scoop out the squash, season it with butter, pepper, salt; a little sugar and cream and replace in shells; an allowance of two or three extra pieces should be made to give filling enough to heap the shells; dust a few cracker crumbs over the top; dot with a bit of butter and bake a nice brown.

Spanish cream—One quart of milk, one-half box of gelatine, four eggs (whites and yolks beaten separately) four level teaspoons vanilla, one cup of sugar. Soak gelatine in milk for half an hour. Then put on fire in a double boiler; beat yolks of eggs and sugar together, and when milk is boiling stir eggs in and cook until it begins to thicken. Beat whites of eggs very light and stir in mixture when it is taken off the fire; flavor and pour into mold to cook. Beat whites well into custard.

Cranberry sauce—Wash and pick over berries. Put on with enough cold water to cover; add pinch of soda. This will bring a good deal of stuff to surface which can be skimmed off. Let them cook till they burst, mash all with wooden spoon, then add sugar, two pounds to three quarts of fruit. Boil slowly one and a half hours. Do not cook in tin but in a granite or porcelain-lined dish. Strain and put in mold when done.

The table, of course, should be set with the prettiest glass, china and silver that the house affords. Little individual paper cups with frills or orange-colored tissue paper, at each place would brighten the table. These are filled with nuts or candies. Name cards are decorated with a bow of orange ribbon or some appropriate decoration as a pumpkin, turkey, autumn scene, flower or leaf or some appropriate quotation sketched in pen and ink or painted in water color. These, of course, for a family reunion are not necessary but they serve to make the table decorations more pleasing. Gourds hollowed out make pretty receptacles for nuts. Pressed ferns and autumn leaves also add much to the table decorations.

She—And you say you can tell by the stars if he loves you? Why, I didn't know that you ever scanned the skies.

Belle—I don't; but I scan his love letters. He is one of those fellows that marks a star for every kiss.

"Ezra, they tell me how that storm t'other day tore things up down Perkinses."

"Sh'd say it did, Zeke. Why, when Perkins got home he found ev' thing blowed off th' tarnation place, 'cept the mortgage."

"Dey ain' no use talkin'," said Charcoal Euh, as he surveyed his prisoner, "when Aw sees er man on his knees in front ob my chicken coop, I mouty well know he ain' out dah holdin' no prayah meeting. Call the police, Mistah Jackson."

WIRELESS TELEGRAPHY is to be established at all stations and on all passenger trains of the Italian railways.

S. F. Market Report.

The Markets in General.

SAN FRANCISCO, Nov. 19, 1902.

FINANCIAL TONE.—Henry Clewes, the New York banker, says "there is still a very pronounced spirit of caution in financial circles; but the public is practically out of stocks, and contraction falls upon those best able to bear it." Bradstreet's Review of Nov. 15th says: "More than usual activity is, however, noted in spring goods, which are being ordered more freely than in average years. This is taken to indicate confidence in prosperous conditions next year." Dun's Review says: "Prospects for continued activity are bright because of unprecedented harvests, prosperity in the agricultural sections assuring a good demand for other products. Threatened labor controversies have been averted in some cases, wages being advanced, while a number of increases were voluntarily given. Railway earnings continue to advance."

GRAINS AT CHICAGO.—Cash wheat at Chicago has gradually and steadily risen during the six trading days past from 72½¢ for No. 2 spring to 73½¢; No. 2 yellow corn from 54½¢ to 55½¢; while barley has remained steady for feed at about 35½¢, and for brewing at 43½¢. The opinion of dealers there, as to future prices for wheat and corn, as evidenced by transactions during the week, are recorded herewith:

CHICAGO WHEAT FUTURES.

	Nov. Op. Cl.	Dec. Op. Cl.	May. Op. Cl.
Wednesday.....	@	72½@73½	74½@75½
Thursday.....	@	72½@73½	74½@75½
Friday.....	@	72½@73½	75 @75½
Saturday.....	@	72½@73½	75 @75½
Monday.....	@	73 @73½	75½@76½
Tuesday.....	@	73½@74½	76½@77½

CHICAGO CORN FUTURES.

	Nov. Op. Cl.	Dec. Op. Cl.	May. Op. Cl.
Wednesday.....	53½@54½	50½@51½	41½@42½
Thursday.....	53½@54½	51½@52½	41½@42½
Friday.....	54 @54½	53½@54½	42 @42½
Saturday.....	@	53 @53½	4 ¼@41½
Monday.....	54½@55½	54½@55½	42 @42½
Tuesday.....	55½@56½	56 @56½	43½@44½

A factor which is becoming important in the world's situation is the extent of the new crop in Argentina.

DRIED FRUITS.—Great disturbance has been caused in the wholesale and retail grocery trade of Germany, as well as to American dealers, by procedure of German officials to enforce the law of that country "for the protection of foodstuffs," in relation to sulphur on American dried fruit. A German trader, in a letter to the Leipzig Tageblatt, says: "The cleansing of wine casks and receptacles for preserved fruits with sulphur is of immemorial practice, and no one has ever heard of any damage resulting therefrom to the consumer of food articles thus created. If the prosecutions pending against the dealers should result in their conviction on account of having violated the 'Act for protection of foodstuffs,' then the retail dealers would naturally refuse to accept the delivery of the fruits ordered by them, and, as the wholesale dealers have already made large contracts for the coming fruit crops, they would have to keep the goods on their hands." The danger of a conflict between various courts on proceedings in the matter being noted by the writer, he goes on to say that "the Chamber of Commerce of Dusseldorf requested the Imperial Sanitary Bureau at Berlin to at once institute investigations concerning the questions of sulphuric acid in conserved fruits and to state particularly what quantity of said acid is to be considered as injurious to health," the purpose of which investigation is to practically forestall the decisions of the courts and minimize the injurious effects of conflicting decisions and consequent delay.

The most intelligent description of the dried fruit situation in California that we have seen is the following from an interview with a prominent coast operator in the New York Journal of Commerce: "The dried fruit market is in excellent shape. There is not an article in the entire list in oversupply. The rapidity with which the goods have moved has been a cause of surprise to everybody in the trade. It is apparent now that our large crop was very much overestimated. Stock remaining here in all lines is comparatively light. It was generally thought that on the first of November we should have a heavy carryover, but stocks here are as low, if not lower, than they have been in former seasons, when the production did not approach that of this year. Apricots in northern California are entirely out of the hands of growers. The shippers have a few cars, but few only. There is no doubt that the northern California apricots will show a very material advance in price during the spring months.

The only apricots that remain here of consequence are in southern California, and we are satisfied that the quantity there does not exceed forty carloads, which are all in the hands of shippers. Stocks of peaches in growers' hands may be 125 carloads—certainly a very considerable quantity, considering the season of the year."

Two local driers at Pleasant Hill, Sonoma county, each with an output of about forty tons of dried apples, are each reported to have sold a few tons at 8c, which is 1c to 2c above f. o. b. California selling prices for fancy stock quoted by principal mercantile journals last week, showing an unexplained element in the market.

HOPS.—Latest New York advices are that "telegraphic advices received from the coast reported firm markets, with the demand fairly active and coming largely from exporters. As a result of the heavy buying experienced for the past week or so prices were again showing an advancing tendency. Bids were reported made of 26c to growers for choice Yakimas, 27c for choice Sonomas, and 25½¢ to 26c was the market price for choice Oregon. The market for New York hops continued strong, and it was learned that the principal English export buyer made purchases in the local market on both Friday and Saturday at 37c for choice grades. Advices from up the State reported 35c freely bid to growers for desirable grades."

Local operations in California, as locally reported, however, have a conflicting appearance. A Marysville paper says: "A press telegram sent from Portland Saturday said M. H. Durst of Wheatland had been in the Willamette valley last week buying hops to ship direct to London. He also bought 268 bales in Salem, for which he paid 25½¢ per pound. Mr. Durst said hops will advance to 30c before next May." A Yuba City paper says: "There is a battle royal between the hop grower and the brewer—hops steadily advancing and the brewers' agents are buying sparingly at advanced figures, hoping to break the rising market. Local quotations are now at 26c and growers are holding for 30c and upward." While a Ukiah paper reports: "This week Sanford Bros. sold their hop crop of 333 bales, amounting to 61,000 pounds, to C. C. Donovan, the Santa Rosa hop man, for 24½¢ per pound. Mr. Donovan also purchased the Burke crop for 24 cents."

PRUNES.—New York market reports show a scarcity of 40-50s and 50-60s, with considerable premium and upward tendency. New York sales of 40-50s in 25-pound boxes noted at 7½¢, with rumors of others at 7½¢, and with purchases of Santa Clara, same grade, 25-pound boxes, at 6c f. o. b.

A coast operator, speaking in New York recently, said: "We believe that we shall see better prices. Of 40-50s practically none are obtainable, except a few which might be had at exorbitant prices—say 1c over the basis of other sizes. We think that more 40s have been sold than will be produced in the State. On 50-60s supplies are light, and this size is commanding a premium of ½¢ to ¾¢. We do not think the prune crop will exceed 75,000 tons, and we think that more than 60,000 tons have already been sold. Prunes have been going out at the rate of 100 carloads a day, and we are satisfied that when packing of orders now in hand is completed we shall see better prices."

Whether individual and perhaps isolated growers are in position to profit by this condition and the strong export demand only they can say.

HONEY.—Talk about the Old World being more honest than the New, there is accumulating evidence in various lines from various directions in our country that the dealers in the Old World can take advantage of "long distance" to make a stand on technicalities and find faults that do not exist in order to secure unjust and unwarranted reductions as well as any dealers in the New. This peculiarity of trade on the other side makes it desirable to ship "amber" honey rather than "white" across the Atlantic, since there may be considerable variation in shade in amber and yet it be impossible to call it anything but "amber," while the least variation from water color makes difficulty, and a distance of thousands of miles with the accompanying freight makes it easy to claim and get a reduction of price with no basis in the honey itself.

The value of quotations on any line of goods depends altogether on whom they are procured from; but a local report from San Diego that the best honey commands 5½¢ would seem to show that quotations of 6¢ to 6½¢ at this point for "white liquid" f. o. b. point of production are not too low, not beneath the market.

RAISINS.—Eastern dealers seem to feel that California producers this year combined with California packers to create a

firm and rising market, and in that they are correct. The packers are now in practical control of the situation, holding raisins so closely that a sharp advance soon is to be expected. The Greek currant element in the trade is not cutting much figure up to date, no large importations or purchases for importation being notable, though it is claimed that the sale of Sultana and Thompson Seedless is being affected by the low price of the currants in New York—4½¢.

TOMATOES.—Inhabitants of the United States, especially those of more particularly English descent, are a sweets-loving people; and the tomato, with its agreeable acidity, is every year becoming more popular in their diet as a corrective. When well packed, consumers and the trade cannot seem to get enough of them. Foster Bros. of Dixon, canners, as well as grain farmers, orchardists and warehousemen, who have this year been buying not only all the home-grown tomatoes they could get, but also supplies from other parts of the State, to increase their supply for next year, have contracted with Japanese gardeners to cultivate 100 acres of land on Putah creek—a part of the Foster lands—the coming season and the whole acreage will be devoted to tomatoes.

LIVE STOCK AND MEATS.—At Chicago last week ordinary farm horses suffered a decline in price of 5¢ to 10¢ a head, though that was not considered important, ranging at \$60 to \$75; best grades at \$100 to \$140. Heavy draft horses were in considerable favor at \$175 to \$200; express horses, \$135 to \$200.

Eureka Standard: Cattle and sheep are not in good condition now, owing to poor feed for the past three months.

The Hanford Sentinel says the price of pork has fallen somewhat this (last) week. C. Summers has been shipping fat hogs from Inyo county to this market.

CITRUS FRUITS.—The first shipment of Mexican oranges to Chicago this year, it is claimed by southern California papers, one car, netted \$8 50 a box. The highest price paid before was \$6 a box, it is said.

A ministerial orchard owner is authority for the statement that buyers have been offering Palermo growers prices which would enable them to net \$1.75 to \$2 a box after counting out cost of picking, but probably not taking investment and cultivation costs into the calculation.

NUTS.—Four cars were shipped from Livermore valley recently.

At Lodi Frank J. Lease, the Klondike capitalist, sold his almond crop of 120 tons a couple of weeks ago to a San Francisco firm at 11c a pound, or \$2640 for the season's yield. At the same time 11c was the highest trade quotation given in the San Francisco market.

HAY.—Local reports show alfalfa bringing producers at Dos Palos \$8 to \$10 a baled ton, and near Hanford 250 tons were sold for \$1258 on the ground, or about \$5 a ton in the stack. Good hay is reported scarce at Oroville, and Al grain hay selling at \$12 a ton, baled.

CORN.—Some kinds have suffered some damage by rain and by overflow of the Sacramento river; to the extent of \$25,000 on the east side of the river, according to a dispatch to the Sacramento Bee. The amount named may be excessive.

BUTTER.—Butter shipments are picking up. All of the dairies have fresh cows and local merchants and shippers report double the quantity of butter to what was received a few weeks ago, says the Petaluma Argus.

Produce Market.

WHEAT.

The cash market for spot wheat moved up steadily from \$1.32½ to \$1.35 for No. 1 and \$1.37½ to \$1.41½ on Wednesday last to \$1.35 to \$1.38½ for No. 1, and \$1.40 to \$1.42½ for milling on Tuesday of this week.

During the week there have been statements that practically several cents more than these prices delivered were actually paid at coast points, but we have been unable to see or get confirmation of such reports from other sources.

SAN FRANCISCO WHEAT FUTURES.

	Dec. Opened.	Dec. Closed.	May. Opened.	May. Closed.
Wednesday.....	\$1 32 @ 1 31½	\$1 34½ @ 1 34		
Thursday.....	1 32 @ 1 33½	1 34½ @ 1 35		
Friday.....	@ 1 32½	1 35½ @ 1 34½		
Saturday.....	1 33½ @ 1 33½	1 35½ @ 1 35		
Monday.....	1 33½ @ 1 35½	1 35½ @ 1 36½		
Tuesday.....	1 34½ @ 1 35	1 36½ @ 1 37½		

BARLEY.

The quotations of the cash market for barley have moved up a little on feed descriptions to \$1.18½ to \$1.21½, but otherwise are stationary at \$1.25 for milling and \$1.55 to \$1.60 for Chevalier, but the market has not been active.

BARLEY FUTURES.

	Dec. Opened.	Dec. Closed.	May. Opened.	May. Closed.
Wednesday.....	\$1 19½ @ 1 19½	\$1 22½ @ 1 22½		
Thursday.....	@	1 22½ @ 1 22½		
Friday.....	1 18½ @ 1 18½	1 22½ @ 1 22½		
Saturday.....	1 19½ @ 1 19½	1 23 @ 1 23		
Monday.....	1 19½ @ 1 20½	1 24½ @ 1 25		
Tuesday.....	1 20½ @	1 25 @ 1 25½		

OCTOBER BARLEY EXPORTS.

The exports of barley from San Francisco during the month of October were as follows:

To	Centals.	Values.
Great Britain.....	334,500	\$377,340
Australia.....	46,578	70,298
Hawaiian Islands.....	43,547	51,436
Tahiti.....	523	698
Panama.....	20	25
Totals.....	425,168	\$499,797

The shipments to Australia were chiefly of the Chevalier variety, hence the high price. The exports in October, 1901, were 809,455 centals, valued at \$746,566.

Feed, fair to good.....	1 18½ @ 1 21½
Brewing and shipping.....	@ 1 25
Chevalier, fair to choice.....	1 55 @ 1 60

OATS.

The reappearance of the U. S. Government as a buyer for 1200 centals gave the market some tone temporarily, but on the whole it is inactive and firm at

White Oats.....	1 25 @ 1 30
Black, for feed.....	1 17½ @ 1 22½
Black, for seed.....	1 25 @ 1 35
Red, common to choice.....	1 15 @ 1 27½
Red, fancy.....	1 27½ @ 1 32½

CORN.

There has been some advance on Egyptian corn.

Large White, good to choice.....	1 45 @ 1 55
Large Yellow.....	1 45 @ 1 50
Small Yellow.....	1 50 @ 1 57½
Egyptian, Brown.....	1 15 @ 1 25
Egyptian, White.....	1 35 @ 1 40
Western, sacked, yellow.....	@ 1 30
Western, sacked, white.....	@ 1 40

RYE.

Good to choice.....	1 10 @ 1 12½
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BUCKWHEAT.

Good to choice.....	nominal @ 1 75
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FLOUR.

California, Family Extras.....	4 00 @ 4 25
Bak rs' Extras.....	3 90 @ 4 00
Ore and Washington, Family.....	@ 3 50
Bakers'.....	3 50 @ 3 75

FEEDSTUFFS.

Bran and middlings were a little easier during the week, but have resumed a firm tone.

Millers quote to wholesale dealers:	
Bran, ½ ton.....	20 50 @ 21 50
Middlings.....	24 00 @ 25 50
Shorts, California.....	21 50 @ 22 50
Barley, Rolled.....	25 50 @ 26 00
Cornmeal, coarse feed.....	31 00 @ 31 50
Cracked Corn.....	31 50 @ 32 00

HAY AND STRAW.

The official report of the amount of hay on hand available for the San Francisco market Nov. 1 of this year shows a total of 98,100 tons, compared with 119,600 tons for the same date last year. The export demand is becoming quite brisk and town trade is also active.

Choice Wheat Hay.....	14 50 @ 15 00
Good Wheat Hay.....	13 50 @ 14 50
Other grades same.....	11 00 @ 13 00
Wheat and Oat.....	11 00 @ 13 50
Tame Oat.....	11 00 @ 13 00
Second Quality Oat.....	9 00 @ 11 00
Barley and Oat.....	8 00 @ 11 00
Alfalfa.....	9 00 @ 11 50
Straw, ½ bale.....	45 @ 62½

BEANS.

Prices are practically unchanged on choice lots. On damaged and wet lots, which are the bulk of what is coming in, the price is anywhere from 25c to \$1 below these given here. The selling market is firm, dealers being owners of most of the stock in hand.

Prices to producers for choice round and carload lots on wharf, city:

Pea, 100 lbs.....	3 00 @ 3 25
Small White.....	3 15 @ 3 20
Lady Washington.....	2 75 @ 3 00
Pinks.....	2 40 @ 2 55
Bayos.....	2 80 @ 3 00
Red Kidney.....	4 00 @
Limas.....	4 25 @ 4 35
Black-eye Beans.....	3 85 @ 4 10
Garbanzos, large.....	2 40 @ 2 65

PEAS.

It is generally admitted that peas for seed have been pretty generally sold up by producers, and are held in few hands among dealers, one of the holders being new in that line, but well known in other fields. Feed stock is worth less, but on free seed stock reputable dealers quote as follows to producers:

For choice stock in city dealers are paying:	
Green Peas, California.....	1 50 @ 1 85
Niles Peas.....	1 90 @ 2 10

SEEDS.

The seed market is in an unsettled condition. Some dealers quote alfalfa as selling at \$12 per ton in San Francisco.

For choice seed to producers, dealers quote:

Alfalfa, Cal.	10 00@	—
Flax.	2 @	2 1/2
Timothy.	4 1/2 @	8

The following are selling at:

Canary, in original packages.	4 1/2 @	4 1/2
Rape.	1 1/2 @	2 1/2
Hemp.	4 @	4 1/2

POTATOES.

Our previous advices that the sweet potato crop of this year had been practically all bought up by dealers in this market is confirmed and price named at \$1.

Principal dealers for choice large lots on wharf, city, are paying:

Burbanks, Salinas, # cental.	75 @	1 17 1/2
River Burbanks, good to select, # cental.	35 @	50
River Reds, nominal.	30 @	40
Sweet Potatoes, # cental.	1 10 @	1 15
Oregon.	75 @	1 15

VEGETABLES.

Commission merchants report realizing for:

Beans, Lima, # lb.	4 @	5
Beans, String, # lb.	4 @	6
Beans, Wax.	5 @	7
Cabbage, choice garden, # 100 lbs.	50 @	75
Cucumbers, # large box.	40 @	1 00
Egg Plant, # large box.	60 @	1 00
Garlic, # lb.	2 @	2 1/2
Onions, # cental.	30 @	60
Okra, Green, # box.	40 @	60
Peas, Sweet garden, # lb.	5 @	6
Peppers, Chile, # box.	40 @	60
Peppers, Bell, # box.	50 @	75
Summer Squash, Bay, # large box.	1 00 @	1 50
Squash, Marrowfat, # ton.	8 00 @	10 00
Squash, Hubbard, # ton.	12 00 @	15 00
Yellow Pumpkins, Eastern, # ton.	18 00 @	20 00
Tomatoes, # large box.	25 @	1 00

LIVE STOCK AND MEATS.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, # lb.	6 1/2 @	7
Beef, cows.	5 @	6
Veal, large, # lb.	7 @	8
Veal, small, # lb.	8 1/2 @	9 1/2
Mutton—ewes, 7@8c; wethers.	7 1/2 @	8 1/2
Lamb, # lb.	9 @	9 1/2
Hogs, dressed.	8 1/2 @	9 1/2

Dealers are quoting prices to producers for first quality live stock, less 50% shrinkage on cattle, as follows:

Cattle—Steers.	8 1/2 @	9
Cows and Heifers.	7 @	7 1/2
Thin Cows.	4 @	5
Calves, large.	4 @	5 1/2
Calves, light (gross weight).	5 1/2 @	6
Sheep—Ewes (gross weight).	3 1/2 @	3 1/2
Wethers.	3 1/2 @	4
Lambs, yearlings, # lb (live weight).	3 1/2 @	4
Hogs, hard grain fed, 150 to 250 lbs.	6 1/2 @	6 1/2
Hogs, small, fat.	6 1/2 @	6 1/2
Hogs, large, hard, over 250 lbs.	6 1/2 @	6 1/2
Hogs, feeders.	5 1/2 @	6 1/2
Hogs, country dressed.	7 1/2 @	8

POULTRY.

Fair dealers seem to think that turkeys will sell better for Thanksgiving than later. It seems probable that the wet weather will cause a holding back of more common lines. Different dealers, having different ability to move off stock, make occasionally a wide range of quotations on certain lines. The market on young roosters is reported firm, by some, and squabs, young ducks and good, heavy, fancy hens in demand. Receipts Wednesday were seventy coops chickens and thirty of turkeys.

Small broilers should weigh from 1 1/2 to 2 lbs.; large broilers, 2 to 2 1/2 lbs.; fryers, 2 1/2 to 3 lbs. at the highest; all over that go as young roosters if they have no spurs and the breast bone is soft. Dealers quote prospective prices for

Turkeys, alive, choice young.	15 @	17
Turkeys, alive, Hens, # lb.	14 @	16
Turkeys, alive, Gobblers, # lb.	15 @	17
Turkeys, dressed, Hens.	17 @	19
Turkeys, dressed, Gobblers.	18 @	21
Hens, California, # dozen.	5 00 @	6 50
Roosters, old.	4 50 @	5 50
Roosters, young (full-grown).	5 50 @	6 00
Fryers.	4 50 @	5 50
Broilers, large.	4 00 @	5 00
Broilers, small to medium.	2 50 @	4 00
Ducks, old, # dozen.	4 00 @	4 50
Ducks, young, # dozen.	4 50 @	5 00
Geese, # pair.	1 50 @	1 75
Goslings, # pair.	1 50 @	2 00
Pigeons, old, # dozen.	1 00 @	—
Pigeons, young.	1 50 @	2 50

BUTTER.

Some quotations we have received rule 2c lower on Dairy descriptions than those here given. Country indications are for heavier shipments, which might make the lower quotations preferable.

Commission merchants quote as returning for:

Creamery, extras, # lb.	34 @	35
Creamery, firsts.	31 @	33
Dairy, select.	28 @	30
Dairy, firsts.	24 @	25
Dairy, seconds.	21 @	23
Flrkin, good to choice.	25 @	27
Mixed store.	18 @	20
Pickled Roll.	24 @	26

EGGS.

The egg market is weaker, especially on better descriptions. Some smaller dealers quote about 5c less than figures here given on first two descriptions.

Commission merchants quote as returning for:		
California, select, large, white and fresh.	45 @	47 1/2
California, select, irregular color & size.	40 @	42 1/2
California, good to choice store.	25 @	30
Eastern.	26 @	27

CHEESE.

Sixteen cents is the very top of quotations.

Commission merchants quote as returning for:		
California, fancy flat, new.	15 @	16
California, good to choice.	14 @	14 1/2
California, "Young Americas".	15 @	—

HONEY AND BEESWAX.

Strictly fancy pure-white extracted will bring almost any reasonable price the producer is minded to ask, there is so little of it. Same with strictly fancy wax.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.	6 @	6 1/2
Extracted, Light Amber.	4 1/2 @	5 1/2
Extracted, Amber.	3 1/2 @	4
White Comb, 1 lb frames.	10 1/2 @	11
Light Amber.	9 @	10
Dark Comb.	5 @	6 1/2
Beeswax, Good to choice, light, # lb.	26 @	27 1/2
Strictly fancy light.	29 @	30

HOPS.

Some large owners who are also dealers estimate that four-fifths of the crop has been bought up. It is doubtful if any Russian river hops can be gotten for 24c.

Buyers are paying for:		
Washington and Oregon.	25 @	26
Sacramento.	23 @	24
Russian River.	24 @	25
Sonoma.	25 @	26

WOOL.

Prices for spring clips are nominal. This market is practically cleaned up on such lines, except a small lot of Humboldt, which is being held at prices which some think virtually puts it off the market. The fall clips are also pretty well sold up. Where there are any they bring about the prices named. The principal activity now on the part of dealers is in scouring and other warehouse work.

Jobbing prices are:		
Humboldt and Mendocino.	12 @	15
Mountain, free.	10 @	12
Plains, defective.	7 @	9

HIDES, PELTS AND TALLOW.

Calf skins are in good demand. Dry hides are selling well at firm prices, and some of the largest houses here advise butchers to dry all hides off cattle of 500 pounds or less, as being slightly more profitable. Quotations remain unchanged, and are not likely to vary much during present conditions in the tanning business.

BAGS AND BAGGING.

Calcutta Grain Bags, buyer June-July.	5 1/2 @	5 1/2
Calcutta Grain Bags, spot.	5 1/2 @	6
San Francisco Grain Bags, 22x36, spot.	5 1/2 @	5 1/2
San Quentin Bags, # 100.	5 1/2 @	5 1/2
Wool Sacks, 4 lbs.	34 @	35
Wool Sacks, 3 1/2 lbs.	31 @	32
Fleece Twine.	7 1/2 @	8
Gunnies.	13 @	14
Bean Bags.	4 1/2 @	5
Fruit Sacks, cotton, three sizes.	6 @	6 1/2, 7
Fruit Sacks, Jute.	6 @	7 1/2

The Fruit Market.

FRESH FRUITS.

Cranberries are scarce and choice Cape Cod bring the price named. Apples are in plentiful supply and slow movement, except for certain lines of strictly fancy. Fancy Spitzenbergs are quoted as high as \$1.75. Prices given on grapes are for choice dry stock only. Tokays are poor and scarce and Muscats have practically disappeared.

Commission merchants are realizing for:		
Apples, fancy, # 4-tier box.	1 00 @	1 25
Apples, good to choice, # 50-lb. box.	75 @	1 00
Apples, common to fair, # 50-lb. box.	25 @	50
Cranberries, Cape Cod, # barrel.	— @	12 00
Cranberries, Coos Bay, # 60-lb. box.	2 25 @	2 50
Raspberries, # chest.	5 50 @	7 00
Grapes, Cornichon, # crate.	65 @	90
Grapes, Isabella, # crate.	75 @	90
Grapes, Black, # crate.	50 @	75
Grapes, Muscat, # crate.	65 @	85
Grapes, Seedless, # crate.	85 @	—
Grapes, Tokay, # crate.	60 @	75
Grapes, Verdelis, # crate.	50 @	80
Pears, Winter Nellis.	65 @	1 50
Pears, other kinds, # box.	40 @	75
Persimmons, # box or crate.	50 @	1 00
Plums, choice large, # box or crate.	50 @	65
Pomegranates, # small box.	40 @	65
Quinces, # box.	35 @	60
Strawberries, Longworth, # chest.	9 00 @	11 00
Strawberries, Large, # chest.	2 50 @	4 00

DRIED FRUITS.

Sonoma county sales of evaporated apples at 8c are said to have been small lots of strictly extra fancy.

Jobbing quotations are:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, fancy.	6 1/2 @	7
Apples, standard to choice.	4 1/2 @	6
Apricots, Moorpark.	7 @	10
Apricots, Royal, good to choice, # lb.	5 1/2 @	7
Apricots, Royal, fancy.	7 1/2 @	8
Figs, 10-lb. box.	75 @	1 15
Nectarines, # lb.	4 1/2 @	5 1/2
Peaches, unpeeled, choice.	4 1/2 @	5 1/2
Peaches, unpeeled, fancy.	6 @	7
Pears, halves, fancy.	9 1/2 @	—
Pears, halves, choice.	5 1/2 @	6 1/2
Pears, halves, fair to good.	4 1/2 @	—
Plums, Black, pitted.	4 1/2 @	5 1/2
Prunes, Silver, good to fancy.	4 1/2 @	7
Prunes, in bags, 4 sizes, 2 1/2 @ 2 1/2 c; 40-50s, 5 @ 5 1/2 c; 50-60s, 3 1/2 @ 3 1/2 c; 60-70s, 3 @ 3 1/2 c; 70-80s, 2 1/2 @ 2 1/2 c; 80-90s, 2 @ 2 1/2 c; 90-100s, 1 1/2 @ 1 1/2 c.		
Figs, White, in bulk.	6 @	6 1/2
Figs, Black, in sacks, # lb.	4 1/2 @	5 1/2
Plums, unpitted, # lb.	1 1/2 @	2 1/2

CITRUS FRUITS.

This market is offish, so far as Butte county oranges are concerned, the reason given being that large orange handling firms, some of them new to the Butte county section, are buying and packing there f. o. b., thus getting the best of the crop, leaving only the smaller and comparatively poorer in quality and pack lots ("orchard" or ungraded pack) to appear in this market. Most dealers here, therefore, prefer central or southern California stock, with a special preference on the part of some strong factors toward the latter, as having the longer season. Southern California was represented in this market this year almost as soon as any section and by equally ripe stock. Small but well colored stock from La Canada has been selling here for two weeks, and a car of Redlands "Camelia" brand is scheduled to arrive this week Saturday. The market is pretty well filled, at least five carloads, much of it in express lots, having arrived the first two days of this week.

Oranges, Navels, fancy, # box.	3 00 @	3 50
Oranges, Seedlings.	1 75 @	2 00
Oranges, standard.	1 00 @	1 25
Lemons—California, fancy, # box.	2 75 @	3 50
California, choice.	1 50 @	2 00
California, standard.	1 00 @	1 25
Limes, Mexican, # box.	4 00 @	4 50
Grape Fruit.	2 25 @	3 00

RAISINS.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5 1/2 c # lb; No. 3 crown do, 5 1/2 c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/2 c; No. 2 crown London Layers, 20-lb boxes, \$1.40 # box; No. 3 crown do, \$1.50; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

NUTS.

Jobbing prices are:		
California Almonds, shelled.	23 @	26
California Almonds, paper shell, # lb.	10 1/2 @	11 1/2
California Almonds, soft shell.	7 1/2 @	9
California Almonds, hard shell.	4 1/2 @	5 1/2
Peanuts, California, fair to prime.	4 1/2 @	5 1/2
Peanuts, Eastern, hand-picked.	6 @	6 1/2
Walnuts, White, soft shell, # lb.	10 1/2 @	11 1/2
Walnuts, White, standard, # lb.	9 1/2 @	10

Produce Report.

Receipts of produce from California interior for week were:

Wheat, centrals.	87 567	Onions, sacks.	4 382
Flour, # sacks.	151,660	Hay, tons.	2,587
Barley, centrals.	107,361	Wool, bales.	1,087
Oats, centrals.	5,240	Roots, bales.	665
Corn, centrals.	2,301	Pelts, bbls.	10,067
Rye, centrals.	300	Hides.	10,095
Beans, sacks.	41,388	Wine, rais.	47,950
Potatoes, sacks.	23,274	Buckwheat, sacks.	154
Straw, tons.	99		

From Oregon:			
Oats.	1,510	Potatoes.	179
Flour.	8,652		

From Washington:			
Flour.	16,262	Potatoes.	724
Oats.	2,094		

From Honolulu:		From New Zealand:	
Wool, bales.	83	Hops, bales.	2

BARBED WIRE TELEPHONE CONCERTS—The people living in the country near Angiola are having a good time with their barbed wire telephone system. The system covers a circuit of 20 miles. Every evening those who have 'phones have a half-hour concert. It is reported that a person can sit in any part of the room and hear distinctly a banjo playing or the words of a song being sung 10 or 15 miles away.

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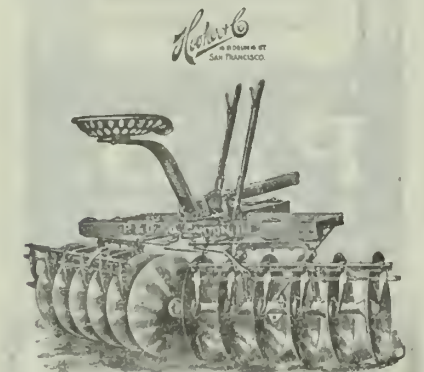
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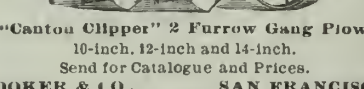
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The Lands About Tulare Lake.

TO THE EDITOR:—I was considerably interested in the account you published in last week's paper of Mr. L. P. Denny's experience in farming the land formerly covered by Tulare lake. There are some statements made in the article that I am at a loss to understand. Among other things Mr. Denny says is this: "In the fall of 1899 I sowed the 320 acres to alfalfa, sowing the seed on the tule sod and harrowing it in with a heavy harrow. The tules at this time were higher than my head as I rode the wheel horse. The October rains brought the seed up, and by spring (1900) it was well started. As the warm weather came on a battle royal began for the mastery between the alfalfa and the tules. The alfalfa was victorious and by the 1st of July the tules appeared dead; the alfalfa took the moisture and grew, while the tules died."

I would like to have you or Mr. Denny tell me what "breed" of tules they have down there. With the tules higher than a man's head while seated on a horse, I am at a loss to know how the ground could be harrowed, or even how the seed could be sowed ahead of the harrow.

With us here, when the tules are at that height they are so thick on the ground that a horse could not be driven through them, and it would be a most absurd proposition to try to sow alfalfa seed on the sod and expect it to choke the tules out. The conditions must certainly be very different down in Tulare and it is this difference that I would like explained.
F. L. HUNT.
Freeport, Cal., Oct. 27.

TO THE EDITOR:—Your letter of 29th inst., with that of Mr. F. L. Hunt, received. In reply will say that I am unable to name the "breed" of tules we have here. They are the same as those found on the Sacramento and San Joaquin rivers and the islands and marshes around the bay. They are a good healthy "breed." In the fall of 1899, before the tules were all dry, fire ran through them, leaving the green ones and occasional spots and narrow strips and the cattails unburned. After the wet weather came on these could not be burned, so I sowed and harrowed through them, they being higher than my head as I rode the horse.

Since my letter was published in the PACIFIC RURAL PRESS I have been flooded with letters of inquiry, criticism and advice. To answer them all would be impossible. I would like to answer them in a general way. To those who have the impression that I am in the real estate business I will say that I am not. I have no land to sell. Others ask: Is there more of that kind of land for sale? There is lots of it at from \$10 to \$20 per acre. Many inquire, Why did you not plow the land? In

the first place it is hard work. I did not like it; then I could not stand the loss. I plowed forty acres, which cost me \$5 per acre, \$200; seeding, disking and harrowing, \$1 per acre, \$40; seed, \$1 per acre, \$40; total expenditure for first year, \$280; seeding second year, \$80; seeding third year, \$80; total expense for three years, \$440. And nothing has grown on that land yet but a few weeds. I will sow it again this month. On the adjoining land I received in the past two years \$85 per acre in crops of alfalfa and seed, besides six months pasture. That would bring the loss up to \$3840. Is that not reason enough for not plowing more of the land?

From the wheat growing counties they ask if I or they cannot raise wheat on this land. To this I will say yes, and it will make you as poor as elsewhere. Others ask, What is the natural product of this locality? They are tules, coyotes, weeds and wildcats, with the festive jack rabbit and excellent salt grass thrown in.

From Arizona and Oregon the letters come with questions according to the environments of the writer. While I cannot answer these letters I will say to one and all, come and see, but leave your infirmities at home with your plow. By writing the Board of Trade, Hanford, Cal., you can procure pamphlets on this county.

Remember this is an alfalfa country and it is better to raise that than something uncertain. I wrote that letter so that the readers of the PACIFIC RURAL PRESS would know that there was such a country and such opportunities still within the reach of all here in California. I received my first information of this lake region from a correspondent in the San Francisco Chronicle when far away in sunny Hawaii. He had hunted and fished on Tulare lake and high winds drove his boat into shallow water on the east side of the lake. When his provisions were exhausted he "walked for miles ankle deep in water over tule land to a hunter's camp." I believe that was near my present home. When I came here I found it all reclaimed and ready for settlers. And my greatest disappointment has been that there are so few people in California who will avail themselves of such grand opportunities as are to be found here.

I have 280 acres of my tule land east of the house sown and harrowed in, and we have 1.25 inch of rain in last twenty-four hours, which insures a good start for the alfalfa seed, and when it comes up it is sure to survive the winter. Wheat sowing on lake bottom will commence as soon as the water moderates and the acreage will be large. We have just completed an artesian well on section 20 of the Duncan Reclama-

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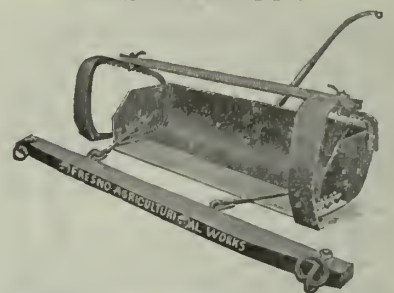
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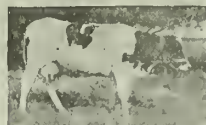
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Wynetta Princess.....	391	2 "	18 7 "	Segriss Pletertje De Kol 2d.....	355	2 "	12 11 "
Minnewawa Louise.....	474	3 "	18 5 "	Western Princess.....	294	3 "	12 11 "
Drusa.....	399	5 "	18 4 "	Painted Lady.....	327	3 "	12 10 "
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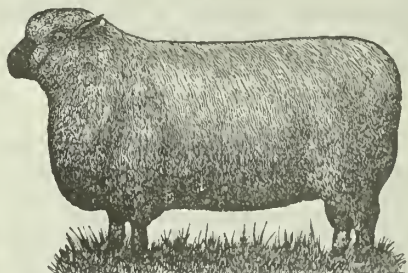
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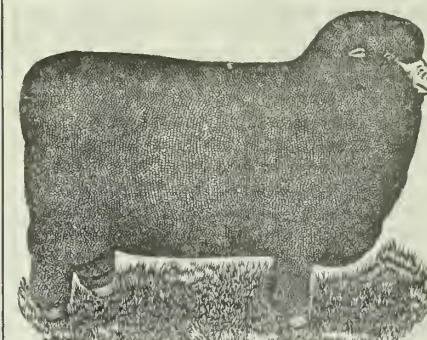
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FRUIT MARKETING.

The Receivership Movement.

TO THE EDITOR:—We have 2200 votes and need about 250 more to elect receivers for the California Cured Fruit Association. We got these votes in response to our postal cards. Now that the election is past we shall make another effort. I think we shall get enough votes within a week to elect the receivers. The law provides that the Association be closed by a board of receivers. The present board are getting good salaries and do not intend to quit while there is considerable money in sight. They have commenced law suits that will keep them in office for four years at least. If we are elected, I think we can arbitrate all the differences and close out the Association in three or four months. I am sure that the growers will get more money out of the Association by electing receivers than by keeping the present board in office. The board—those members in San Jose who are getting pay—are working hard to prevent our election. It is costing about \$1500 a month to pay current expenses of the Association.

C. W. CHILDS.

San Jose.

Money for the Raisins.

The directors of the California Raisin Growers' Association, says the Republican, have already paid out as much money as the entire crop of last year brought. Up to the 10th inst., the Association had received \$1,712,592.25, and had paid to the growers \$1,568,147.40, having a balance on hand of \$144,444.85.

The total amount paid out last year was \$1,648,178.12.

It will be seen then that the amount of money on hand Monday night was in excess of that paid out during the whole of last year, and that paid out, while a little less than the whole of last year's receipts, is now, with yesterday's payment, in excess of last year's return for the whole crop.

The Association received in October \$1,253,655.55, and in November up to closing hours of the 10th, \$458,936.70, making a total of \$1,712,592.25.

There was paid out in October \$1,138,890.64, and in November up to closing hours on the 10th, \$429,956.76, making a total of \$1,568,147.40, and leaving a balance still on hand of \$144,444.85.

There is a good deal of activity at present among the packers to secure raisins of the particular grades they desire.

The packers are also having a great deal of difficulty in getting cars. Sometimes they have to wait two or three days for a car. This is exceedingly unfortunate at the present time, especially to the seeders, as there is a great demand for seeded raisins now. This car shortage is not a local matter, it being general over the country. It is due to the exceptionally large crops and the neglect of the railroad companies to provide for the situation.

Sustained Healdsburg Growers.

At a meeting of the Santa Rosa branch of the California Cured Fruit Association, a resolution endorsing the Healdsburg members in their protest against the division of receipts made by the Association was unanimously adopted. The Healdsburg members think the growers of Santa Clara were given a price differential of \$15 a ton, when the rate justified only about \$2.50. Treasurer Bond, of the C. C. F. A., is reported to have said that it would take a week to figure out what was coming to the Healdsburg growers. Lawyer Titus, of San Francisco, has agreed to represent the growers on a contingent fee. Many Healdsburg growers have signed the agreement, and it was decided to send it to Geyserville, Cloverdale, Ukiah, Santa Rosa and other points for signatures.

Month After Month a cold sticks, and seems to tear holes in your throat. Are you aware that even a stubborn and long-neglected cold is cured with Allen's Lung Balm? Cough and worry no longer.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING NOVEMBER 4, 1902.

- 712,474.—GAS GENERATOR—D. Barnard, Bakersfield, Cal.
 712,636.—FURNACE—C. S. Patchelder, Spokane, Wash.
 712,658.—CORN PARER—E. Dellwig, San Jose, Cal.
 712,659.—MOTOR CONNECTIONS—Donnatin & Greenamy, Los Angeles, Cal.
 712,661.—CHUTE GATE—H. L. Dunn, Seneca, Cal.
 712,998.—CAN BODY FORMER—J. Eldridge, S. F.
 712,917.—BABY CARRIAGE SEAT—M. Elwert, Lodi, Cal.
 712,786.—DOLL—W. G. Flint, San Jose, Cal.
 712,967.—ANIMAL EXTERMINATOR—J. V. Goulardt, Hayward, Cal.
 712,530.—CURRYCOMB—J. Herfert, Tucker, Wash.
 712,677.—MARINE PROPULSION—R. B. Hewson, S. F.
 712,795.—CALCULATING MACHINE—A. Hoch, Alameda, Cal.
 712,680.—SUBSOIL PLOW—T. J. Hubbell, Pasadena, Cal.
 712,938.—SOLDERING IRON—A. G. Kaufman, S. F.
 712,941.—TUCKING—M. Lamond, Oakland, Cal.
 712,699.—HAT FASTENER—Leu & Sjostrom, Los Angeles, Cal.
 712,696.—BRIQUETTE MACHINE—R. Martin, S. F.
 712,698.—BICYCLE—J. W. Master, San Diego, Cal.
 712,838.—ROTARY SCRAPER—R. H. McCaughey, Campbell, Cal.
 712,576.—DENTAL TOOL—J. F. O. McMath, Oakland, Cal.
 712,953.—TOE CLIP—F. J. & W. H. McMonies, Portland, Or.
 712,701.—DENTAL TOOL—A. F. Merriman Jr., Oakland, Cal.
 712,944.—SHIP LOADING DEVICE—W. F. Mills, S. F.
 712,959.—HOISTING HOOK—C. F. Pohlman, Spokane, Wash.
 712,592.—ROCK DRILL—J. Puschagut, Black Diamond, Wash.
 712,721.—VAPORIZER—N. L. Rigby, Los Angeles, Cal.
 712,722.—GAME TABLE—E. R. Robbins, Sacramento, Cal.
 712,729.—CLOCK—H. Schumacher, S. F.
 712,734.—BORING DRILL—A. C. Shuster, Bakersfield, Cal.
 712,612.—BALLLOT MARKER—T. C. Spelling, S. F.
 713,040.—DENTAL BRIDGE WORK—E. L. Townsend, Los Angeles, Cal.
 713,041.—DENTAL TOOL—E. L. Townsend, Los Angeles, Cal.
 712,983.—HAMMER—G. F. Volzht, S. F.
 712,988.—GAS STOVE—T. R. Warren, Glendale, Cal.
 713,030.—ADDRESS HOLDER—D. E. Werts, Grants Pass, Or.
 712,879.—OIL BURNER—D. C. Wilgus, S. F.

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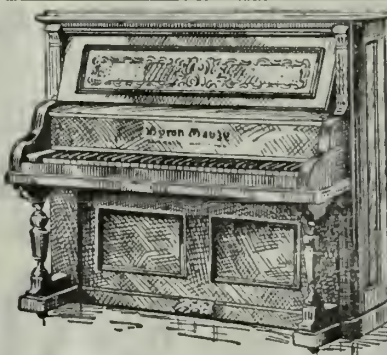
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Patrons of Husbandry.

Tulare Grange.

TO THE EDITOR:—This Grange met at its hall on the 15th. After reading and approval of minutes of the last previous meeting, the committee on memorial resolutions on the death of Alpha Messer, past lecturer of the National Grange, submitted a report which was approved. Circular No. 2 from State Grange, giving names and addresses of standing committees, was read.

The subject of the day was then considered: "Carelessness is a greater hinderance to success than laziness."

The subject was well discussed, nearly, if not quite, every one present expressed some view on the subject, the opinion of many being that negligence is the outgrowth of laziness, and that the industrious, negligent person is the very rare exception to the rule.

The question box was then opened and the following questions drawn from it:

1. Will the present raisin combine last or will it, like so many other farmers' combinations, burst up in a short time?
2. Are the conditions for dairying as good in this county as in other parts of the State?
3. What is the cause of roup in chickens and what is the remedy?

THE RAISIN ASSOCIATION.—Replying to the first question, the opinion expressed was that the present raisin combination is the best, so far, ever organized, that sales are prompt, prices such as pay the producer a fair compensation and furnish the product to the consumer at a price which will promote the largest consumption; that these desirable, satisfactory results can only be had through the co-operation of all the raisin producers, and, as long as such satisfactory results can be had by co-operation, it will be nothing short of madness on the part of the growers to abandon a system of sales which bring such good results. It is reasonable to suppose time and experience will develop the necessity of some change in details, but it is plain to be seen raisins, in the quantities they are now produced in California, can never be made a profitable crop, except by co-operation in marketing, for this reason it is not a supposable case the raisin combine will burst up in a short time.

TULARE DAIRYING.—As to the success in dairying, it was reasoned that the conditions in this county are as favorable for successful dairying as they are in any county in the State. It takes certain conditions to make any business, in a commercial sense, successful. The article for sale must be such as there is at that point a demand for, the price must be within the limit the market will pay for it; that price must be such as will pay a reasonable remuneration to the producer; the climatic conditions, with a fertile suitable soil and reasonable diligence, must be such as will enable the article to be produced and sold with a just compensation to the producer at the price the market is offering. Tulare county has all these incidents to successful dairying, the climate is salubrious, stock of all kinds, including dairy cows, can with as little cost be kept as well as they can in any county, forage plants in as great abundance and variety of the most nutritious nature are grown as cheaply as in any other county, the facilities for marketing are good and, as compared with other portions of the State, the cost of land is low. The conditions for successful dairying are as good in this county as they are in any part of California. If more dairying has not heretofore been carried on in this county it is because other industries seem to offer opportunities for greater compensation. It is now being realized, however, that there is no safer business than cattle raising with a milk production for dairying.

ROUP.—In discussing the third question it was said roup in chickens is caused by exposure to drafts. The face of the chicken is red and swollen, the wattles are also swollen; in this stage it has been cured by dipping a feather in

a solution of coal oil and bluestone, forcing open the mouth of the chicken and forcing the feather down its throat. This should be done about four times a day for two days. It will in the early stage of the disease have a good effect; in a more malignant shape, when the eyes swell and there comes a cheesy formation behind them, the best treatment is a prompt application of the hatchet.

As to the desirability of the chicken business, one brother stated in two months last past, from 377 chickens he had sold in this low-priced market \$130.45 worth of eggs.

At the next meeting the Grange will elect officers for the ensuing year and by a good dinner to themselves and friends celebrate the birthday of the Order. The topic for the day will be, "What systematic effort can be made in this Grange the coming year that will increase the efficiency of its educational work?"

In discussing the dairy business, one brother stated he cuts a common alkali weed, mixes it with alfalfa and feeds it as a ration to his milk cows; from each of the cows so feed he has realized for cream \$40 to \$45 for the year, the milk being calculated as worth \$10 a year more. Can Humboldt county beat that?

J. T.

The National Grange.

The annual meeting of the National Grange began in Lansing, Mich., Nov. 12, with delegates from twenty-six States in attendance.

Grand Master Aaron Jones, in his annual address, congratulated the order on its wonderful prosperity during the past year. An important part of the work of the order, he declared, was to make the farming industry more important and profitable, and he expressed the opinion that the cost of production can be reduced from 10% to 25%, and the aggregate production of the farms of the United States increased from 50% to 100% by the adoption of the best methods.

The causes of present unsatisfactory conditions were said to be many, and Master Jones enumerated excessive charges and discrimination in transportation, exorbitant storage charges, large commission shortage, unequal taxation, local and national dealings in options on Boards of Trade, trusts, adulteration of food products and official oppressive severity.

Farmers were advised to provide for the sale of their products in such a manner as will secure to them what justly belongs to them, and to this end Master Jones recommended that the farmer should never lose control of his property until it is needed for consumption.

The following recommendations in the line of national legislation were made:

The extension of free rural mail delivery; postal savings banks; election of United States Senators by the people; a constitutional amendment giving Congress power to regulate and control trusts and other combinations; enlargement of the powers of the Interstate Commission; regulation of the use of shoddy; pure food laws; provision for the extension of markets for products equally with manufactured articles; the enactment of an anti-trust law clearly defining what acts on the part of any corporation would be detrimental to the public welfare; speedy construction of the Nicaragua canal by the United States, and a speed construction of a ship canal connecting the Mississippi with the great lakes.

The report of Secretary Trimble shows that last year 256 new Granges were organized, Michigan leading with

ninety, and eighty-four Granges were reorganized. For the last quarter New York paid a per capita tax on 46,000 members.

Michigan is second with 32,000, Maine paid for 30,500 and Ohio for 20,000. Owing to the small per capita tax enacted by the national body, the receipts amounted to but \$9203, and it is probable that within the next year a movement will be started to increase the tax so as to permit of more extensive work being done.

Answers by Dr. C. W. Fisher.

CHRONIC DYSENTERY.

TO THE EDITOR:—A good many yearlings here are dying of chronic dysentery. Can you advise me how best to treat it? What is mostly the cause of it?—READER, St. Vincent, Marin county.

TO THE EDITOR:—It would not be wise for me to advise treatment of your yearlings for dysentery, as there are so many causes. Better consult a good local veterinarian or write the experiment station, Berkeley, asking that Dr. A. R. Ward be sent to investigate the trouble and advise preventive treatment.

C. W. FISHER.

San Mateo.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

It is reported that seven of the largest lumber dealing firms in Santa Clara county will form a combine within the next few weeks and agree upon a schedule of "stable" prices for producer and consumer.

For Internal and External applications we have found Perry Davis' Painkiller of great value and we can recommend it for colds, rheumatism or fresh wounds and bruises.—Christian Era. Avoid substitutes.

GREEK contract labor is gradually displacing all other kind on the Poge-gama (Klamath county) Oregon line of railway.

DIRECT SHIPMENTS.—It seems as though there never was so much direct marketing of fruits by local concerns as this year.

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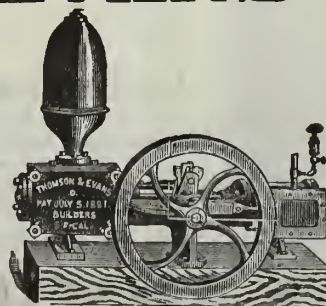
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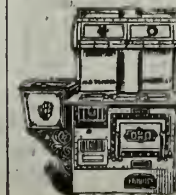


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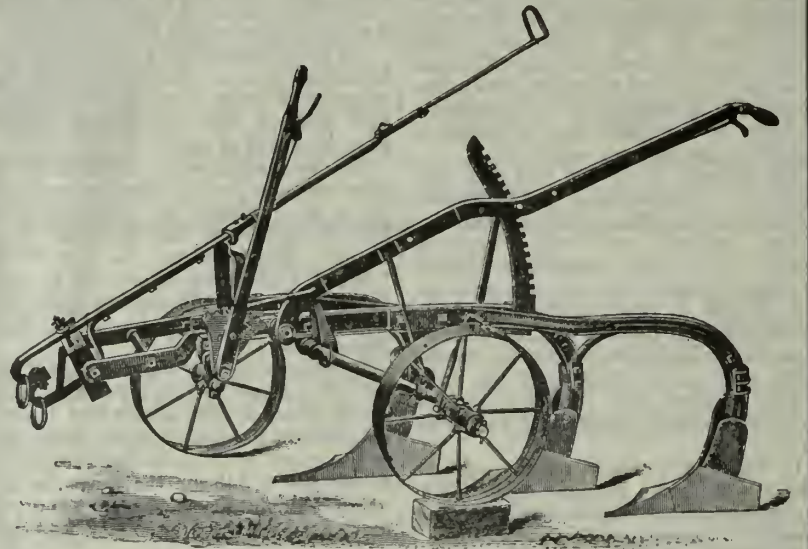
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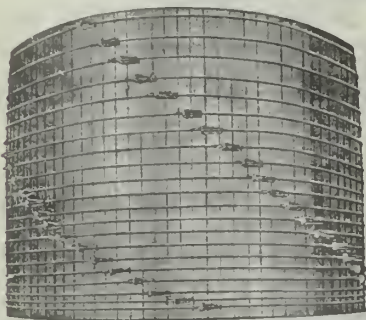
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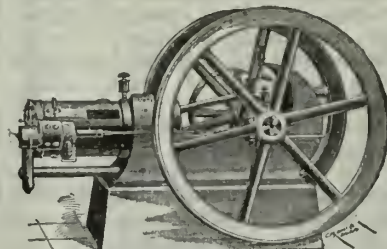
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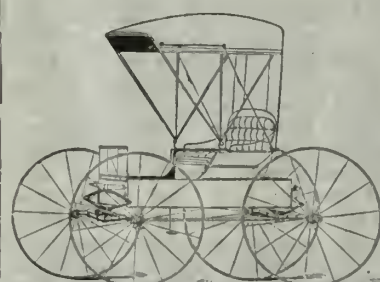
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Guaranteed for 2 years. Everything that goes into
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ing rail, all wool lined. Trimming, green leather,
Spring Cushion, Spring Back, ends of seat nicely
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THE PACIFIC RURAL PRESS

A CALIFORNIA FRUIT BULLETIN.

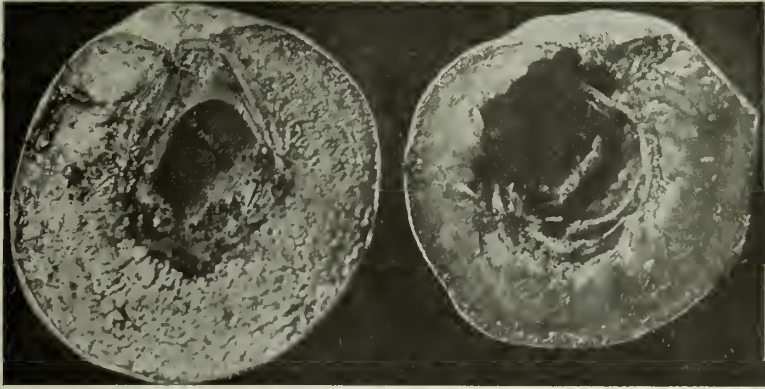
Vol. LXIV. No. 22.

SAN FRANCISCO, SATURDAY, NOVEMBER 29, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

The Victory Over the Peach Worm.

We have kept our readers fully informed of the results of the University investigation and prescription for the peach worm, or, as it has been chiefly named hitherto, the peach moth, in the orchards of Placer county. They will remember how the investigation was undertaken by Mr. W. T. Clarke, under the direction of Prof. C. W. Woodworth, and that Mr. Clarke, by his sharp sight



The Peach Worm and Its Injury to the Fruit.



Pupæ of the Second Generation of Peach Worms in Position Upon the Fruit.

and ready ingenuity, soon detected the time at which a winter remedy could be most effectively applied, and what that remedy proved to be. This information was given to the public last spring, early enough to admit of its immediate use, and really enabled the growers to save many thousands of dollars' worth of peaches while the investigation was still in progress. Mr. Clarke showed in his work not only scientific acumen, but business-like promptness, which are not too often combined in expert investigators. The publication covering the season's work has just been made as Bulletin 144 of the University Experiment Station at Berkeley. We shall have more to say of its details at another time, but we wish now to impress several very significant pictures upon the attention of our peach growing readers, so that they may clearly understand that the peach crop can be saved from this serious pest. First is the pest itself, disclosed as the peach is parted, with its hateful burrow beginning at the stem end and extending around the pit, with the attending deposit of excrement. The next picture shows the exterior of peaches upon which the worm has located itself for pupation. The place is usually at the stem end of the peach and not generally the same one in which it has been burrowing, as though the worm understood that a sound peach is a better resting place than one decaying in the center. After a little time the moth appears and lays eggs, from which worms enter the later peaches.

The next picture shows the ruin wrought by these worms when left to work it, amounting to three-quarters of the crop, while in contrast is the crop saved by



From unsprayed orchard having 75% loss.

From well-sprayed orchard having less than 1% loss.

Showing Two Ways of Disposing of the Peach Crop—A Striking Suggestion.

spraying, less than 1% being lost. Could any showing be more eloquent? Last are pictures showing the means by which the victory was secured.



Boiling the Lime, Salt and Sulphur Spray.



Spraying Outfit Applying the Lime, Salt and Sulphur Spray.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, November 29, 1902.

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The Week.

The horticultural event of the week is the opening of the citrus fair in the grand nave of the ferry building in this city. The handsome apartment, something like 600 feet long and 50 feet wide, with mosaic floor, tiled walls and trussed ceiling, is now the environment of a dozen or more artistically planned and decorated booths enclosing fruit and fruit products largely of the citrus connection. The display is delightful and it stands right in the way of the tens of thousands of non-residents who will enter the city during the time of its maintenance, not to speak of the other thousands of metropolitans who will thus get new idea and appreciation of the splendid back country of San Francisco. As we go to press one day earlier than usual this week, the display is being completed, and by Thanksgiving day the display will be ready for the throngs who will make a visit to it one of the features of their Thanksgiving declarations. And it will be well to do so. Thanksgiving for this glorious State and for the splendid things which man can do here, in co-operation with a generous Creator's bounty, is one of the most sincere and devout things which an appreciative people can do. And, while giving thanks, all can resolve to do something to push the development of the State along lines of honest industry and righteous living, and this too is a devout resolution befitting the day. May all to whom this message may come participate in this practical form of worshipful thanksgiving—in person if they can; in spirit if they are too distant, for thankfulness for God's gifts to California and resolution to be more worthy of them, can be the fervent emotion of every Californian wherever he may be.

Wheat is still moving upward and within the last few days is going by leaps and bounds. Barley has also ascended, while oats and corn are strong and rye, of all the cereals, is a laggard. Even Egyptian corn is selling at advances, and will be largely used for feed in place of barley, which is so sharply wanted abroad. All feedstuffs are firm and hay and straw have joined in the onward procession. Meats are in good shape—hogs alone shading in sympathy with reduced values of pork products. High prices seem to have wrought their usual work with butter and eggs, for people stop short at their limits and declines are noted in our Market Review this week. Cheese travels in a special car and is in too light supply to recede. The prediction of a good Thanksgiving poultry trade which we made seems to be verified so far, for receipts have been light, though turkeys are flying in from all around the sky. Potatoes

and onions have done fairly well, considering the ample supplies. The fresh fruit market has no notable features; citrus fruits are plentiful and not over brisk. Dried fruit has strong features—even prunes are looking better. There is much in the situation, to encourage planters who plant wisely. Honey is about the same, with a good look to it.

The Water and Forest Association will meet in this city at the Palace Hotel on Dec. 5th, at 10:30 A. M. As the Fruit Growers' Convention will then be in session, there will be an opportunity for our horticulturists to show more interest in the irrigation and forestry movement which will be disclosed at the coming session of the Legislature. Great things are planned in revision of laws and promotion of expert investigations in co-operation with the general Government, and all should take part in shaping policies aright. Let the readers of the PACIFIC RURAL PRESS take their fit place in all such progressive councils.

None can yet tell in what shape the oleomargarine issue will be revived at the coming Congress, but it is likely enough to arise with considerable force. The bogus dairy product people are not going to suffer in patience if they can help themselves, and their lawyers are already probing for holes in existing legislation. One can more readily appreciate how much the bogus interest can afford to spend in such effort when he knows that since the law against yellowing the bogus product went into effect on July 1st last. During the three months the total amount of colored oleo upon which the tax of 10 cents per pound was paid was only 18,252 pounds. Uncolored oleo which paid 1 cent tax in July amounted to 1,799,602 pounds, August 1,415,553 pounds and September 1,798,305 pounds. This is much below the average sale of oleo during previous years. To be exact, the total sales of oleomargarine for the same quarter of last year was about 10,750,000 pounds, which is more than twice as much as was sold this year during the same period. To lose a sale for 5,000,000 pounds of fat in three months is enough to make the slaughterers mad and wild for their old freedom to color the fat yellow like butter. They will get it if there is any virtue in law books and coin sacks. Look out for them.

The Chinese may, after all, teach the Californians of American persuasion how to co-operate. It is reported that in the Stockton district a corporation known as the San Joaquin Valley Association includes nearly all the large owners among the Chinese of the island and river districts, so that by the combine two-thirds of the potato crop of the San Joaquin valley will be under control. Already large consignments have been sent to Los Angeles and south into Texas. It is the intention eventually to cover all Missouri river points. Lee Yuen, the general manager, in speaking of the association, says: "It is our aim to do away with the middleman by selling direct. If the commission man can make on car lots, I don't see why we can't combine and realize the same as he does. And by handling large shipments we expect to get better rates in transportation. The downward tendency of prices compelled us to do something to protect ourselves." Yes, that is just the way our white co-operators have talked, but to mass strength enough to do the things talked of fairly to all concerned, and do them economically and wisely, has seldom been attained. Let us see whether the Chinamen will be more disposed to trust each other and to refrain from cinching each other.

The Interstate Commerce Commission wants to know some more things about California fruit transportation and will meet in Los Angeles December 15 to hear testimony on the following points: Whether the defendant carriers pool their citrus fruit traffic or divide the earnings therefrom; whether the blanket rate of \$1.25 per 100 pounds upon oranges and other citrus fruits from southern California to points on and east of the Missouri river and the minimum carload weight of 26,000 pounds are unjust or unreasonable under the provisions of the statute; whether the statute applies to the charges for refrigerating, and, if so, whether these refrigerating charges are unjust or unreasonable. These will be good things to know and we hope the Commission will get a good deal of comfort out of a winter visit to California while listening to testimony about them.

QUERIES AND REPLIES.

Bad Alfalfa Seed.

TO THE EDITOR:—I send a sample of alfalfa seed of which I wish you to make a careful test of its germinating power, of the per cent and kind of foreign seeds in it, and also if they are a kind that would be injurious to have on the land. Let me know if this seed would be rated as a first-class quality.—MERCHANT, Shasta county.

Testing seed is an expert matter requiring special skill and appliances and much time for careful observation. We cannot undertake it as an editorial function. It is, however, of great importance, and to give our readers an idea of how desirable it is for both sellers and purchasers of seed to know exactly what they are dealing in we have secured a full treatment of the above sample by Miss Alice F. Crane, 2316 Clay street, San Francisco, who is a professional tester and examiner of seeds, and her report is as follows:

Germination: The germination tests were made in soil, the seeds being grown under the most favorable conditions of soil, heat and moisture. The average per cent of germination is 23.

Purity Test: There was 1½%, by weight, of impurities, consisting of dirt, stems, weed seeds and seeds of timothy (*Phleum pratense*). In five ounces of the alfalfa seed the following foreign seeds were found:

	No. Seed.
1. Goose foot (lamb's quarters).....	576
2. Timothy grass.....	205
3. Chess (cheat).....	18
4. Yellow burr weed (fire weed).....	10
5. Common yellow mustard.....	6
6. <i>Eichinospermum redowskii</i>	4
7. Dock.....	3

Chenopodium album is a troublesome weed that grows in all localities, and seeds abundantly. Chess or cheat (*Bromus secalinus*) is much condemned in the Eastern States, where it is a very troublesome weed in grain fields. There is a common fallacy that wheat turns into this weed, owing to the fact that it sometimes grows where clean seed has been sown. We believe that the seeds of this plant retain their vitality for a long time, and often grow after having remained in the soil for a number of years. As *Bromus secalinus* is suitable for a forage plant, it would perhaps not be injurious to sow it with alfalfa.

The seeds of yellow burr weed and of *Eichinospermum* are carried by the hair of animals and, by clothing to which they adhere.

In sowing one pound of this alfalfa seed (only 23% of which will germinate) you would sow about 2630 foreign seeds. Judging by the list of weed seeds named above, it is possible that the alfalfa seed was raised in one of the Middle Western States.

The foregoing shows quite clearly that if our merchant friend laid in a stock of such seed he would work havoc with the interests of his customers and, indirectly, with his own. His course in securing testimony to the quality of the goods is very commendable. Large buyers or associations of small buyers should secure such evidence for their own protection by securing samples and having determinations made. If Miss Crane's surmise that the seed came from the Middle West is correct, it is important that all seed dealers give heed to this matter. If that district is to produce seed of such low germinating power and so loaded with foul weeds, our buyers should insist upon having California seed, properly grown, and let the people in the central district enjoy their own seeds.

Pruning Peach and Almond Trees.

TO THE EDITOR:—I have forty acres of peach trees which have not been pruned for the last five years. They have made a big wood growth, especially the clings, and I am anxious to know how to proceed with the pruning, and can you name a good book on the subject? The varieties I have are Muirs, Early Crawford, and Orange and Lemon clings. Muirs being a slow-growing tree, I presume should not be cut back so severely as the other varieties. I also have ten acres of almonds, seven years old, five acres of which were fairly covered with nuts, the other five having none on at all. Most of the almond trees are being taken out owing to the late frosts nipping the blossoms. My five acres seem to be in a somewhat sheltered position, with the result that mine bear and others do not. These trees have not been pruned at all. Will you kindly enlighten me on this subject? Would you advise heavy pruning or not, and when it should be done for best results. Would it be advisable to cut the bark of the trunks in order to allow a freer flow of sap?—NEW COMER, Orange county.

The fullest account of pruning peaches, with illustrations representing the methods of leading peach growers in all parts of the State, is given in our book, "California Fruits and How to Grow Them."

Success in growing the peach depends upon regular cutting back to promote the growth of new wood each year and to prevent the tree from becoming too rangy in its growth. It is usual to cut back the new growth about one-half, but this will depend something upon the variety. Another effect of cutting back the new wood is to prevent the tree from overbearing and, in connection with regular thinning, to secure a good amount of large, merchantable fruit. Experience has amply proved that the profit from peach growing and the continued vigor of the tree are both conditioned upon regular pruning. The growth of the almond tree is somewhat different and about the only pruning that is done for bearing trees is to prevent the shoots from becoming too numerous. Very little shortening-in or cutting back is done. Many almond trees have been taken out because they were in frosty situations and this seems to be the only thing to do with them, unless you wish to work them over to prunes or peaches, for the almond takes kindly to the budding-in of these fruits. It is very seldom necessary to cut the bark of a tree in order to further freer growth, but sometimes, if the tree is evidently bark-bound, such treatment is desirable.

California Egg Production.

TO THE EDITOR:—I have received several California papers in which the quotations of eggs run as high as 45 cents per dozen wholesale. This price is so high compared with what we have been used to, I am led to believe that possibly fowls do not do well in California. Is this a fact, if so, what is the cause?—READER, Lexington, Ky.

The quotation which you see in California papers of eggs at 45 cents per dozen, wholesale, is true. In fact, they went to 55 cents last week. It applies, however, only to fresh eggs straight from the farm; meantime there are large quantities of eggs from cold storage and also eggs brought here from Eastern States, which are going at much lower figures, say 25 to 30 cents. Just at this time of the year for a short period fresh laid eggs are very scarce and our readers have not found it practicable to increase the quantity. Eggs are, however, as a general thing high in California, so that the introduction of Eastern eggs continues nearly through the year; except when the Eastern prices run very high and then there is some movement of California fresh eggs to the Eastern States. This occurs in the latter part of the winter. There is also a very large quantity of Eastern poultry disposed of in our markets. It comes overland in specially constructed triple-decked cars alive, and also in refrigerator cars, dead. There is opportunity for the extension of the California poultry interest and good returns for any one who masters the local difficulties, understands the business thoroughly and has liking and devotion for it. Some of our prosperous localities are those in which the poultry interest has reached highest development. Some facts along this line may be found on page 342 of this issue.

Bitter Cucumbers.

TO THE EDITOR:—Please tell what makes bitter cucumbers and is there a remedy?—GROWER, Escondido.

Cucumbers are very apt to be bitter if the plant is unthrifty for lack of moisture; that is, cucumbers suffering from drouth will often be very bitter, and this can be prevented by supplying water in season so that more rapid growth could be attained. Sometimes, perhaps, the seed from poorly grown specimens produces bitter cucumbers. We think the trouble will seldom be encountered if the plants are grown quickly and with abundant moisture, but it is also important that seed be taken only from well-grown specimens, as those showing poor flavor would be apt to reproduce this defect in their offspring.

Removing Warts.

TO THE EDITOR:—I have a young cow three years old. She had her first calf in January, which was never allowed to suck. About three months ago long slim warts began to appear and now there are at least twenty warts on each teat. Is there a remedy for the removal of these warts?—A SUBSCRIBER, Paradise.

Remove the warts, not all at once perhaps, with sharp clean shears and touch each wound with lunar caustic in stick form—carefully, so that the caustic will not spread upon the adjacent skin.

Lemon Curing.

TO THE EDITOR:—I am referred to you for information about lemon curing. Please tell me what publications are available on the subject?—W. W. L., Tampa, Florida.

We have written to Mr. J. J. Keegan, secretary of the State Board of Horticulture, Sacramento, asking him to send you a thick pamphlet on citrus culture in California, in which you will find discussion of lemon curing. In "California Fruits and How to Grow Them," of which we send a circular, there is a discussion of conditions of lemon curing and details of construction of a lemon house, which has been found quite satisfactory in operation. The latest proposition, however, is to use an open shed, instead of a closed house, the lemons being boxed and stacked, about a carload in each stack, and then each stack covered with a canvas hood or cover which can be lowered to the floor or raised above the stack of boxes by means of pulleys and ropes to the frame overhead. This makes it possible to completely enclose, or to partly or completely uncover each stack according to temperatures and atmospheric humidity, and thus arrange conditions which seem to be best suited for regulating the curing as each block of fruit seems to require. This method is in practice by Mr. C. C. Teague, Santa Paula, Ventura county, and is supposed to have particular advantage, in that the desirable amount of ventilation may be almost instantly secured by the adjustment of the canvas cover. It has only been in use one season, and though the results of shipments cured in this manner have been very satisfactory, it is, of course, too soon to consider the matter fully demonstrated.

Bean Planting.

TO THE EDITOR:—What time of the year should pink beans be planted, and how are they planted? Are they put in with a drill? Also, about how many pounds would be required per acre? Have you any literature covering the questions?—ENQUIRER, Sacramento.

Beans can be planted only when the season is far enough advanced to be safe from frosts—about the same time that you would plant corn or squash. The date, of course, differs in different localities, because some regions have no frosts after January and others have frosts until May. There is little, if any, of the commercial crop planted anywhere before the first of May. Large plantings are made with the "bean planter," which is a drill especially arranged for planting at right distances, which for small beans are about 2½ feet between the rows, the beans dropping about 4 inches apart in the row. About eighty pounds is required to sow an acre. Our book on "California Vegetables" covers successful methods with beans as with other vegetables.

Prunes on Apricots.

TO THE EDITOR:—I have a block of apricots that are not profitable and I think of working them over to Sugar or Imperial prunes. I know that apricot stock is used for budding, but I have some misgivings about grafting onto old wood. I very much desire to make the change if safe.—SUBSCRIBER, Tehama county.

We cannot remember seeing apricot trees top-grafted to these prunes and for that reason lack a little assurance on the proposition. We are aware that opinion among fruit growers differs to some extent as to the permanence of the unions of prunes and apricots. Without present knowledge, however, we would expect success in grafting-in above the forks, where smaller wood can be had. There is small chance of failure and the risk will be the cost of the grafting, because if the grafts fail numerous shoots will put out which can be budded to whatever seems desirable early in the following summer and little time be lost. We wish readers would give their observation with top-grafting apricots to the prunes named.

Duck Forage.

TO THE EDITOR:—The enclosed sample of seed was taken from the crop of a duck shot on Suisun marsh. What is the name of the plant and its general appearance when growing? Does it grow best in wet or dry ground, or in water? If the water, should it be brackish or fresh? Can the seed be purchased in the market?—HUNTER, Suisun.

The sample of seed found in the crop of a duck was referred to Mr. H. M. Hall of the Botanical Department of the University, and he prepares the following statement, the determination of the seed having

been made by Miss Alice Crane: The name of the plant is Gnaphalium purpureum, or "purple cudweed." It belongs to the compositae, or sunflower family, and is closely related to the edelweiss of the Alps. It is a common plant in California in open places, especially in damp soil along margins of ponds and marshes. The plant is densely white, woolly, a foot or less high, simple-stemmed, leaves entire, sessile, spatulate, ½ inch long, flowers in heads, which are grouped into an oblong cluster terminating the stems, brown or purple. It reproduces by seed, but it is doubtful if it is kept in stock by seedsmen. We do not find it listed in any of the catalogues at hand

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 24, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Generally clear and cool weather prevailed during the week, with high north winds. Light rain fell on the 18th. Heavy frosts occurred in some places on the 21st and 22d, causing slight damage to tender vegetables. The strong winds dried out the soil sufficiently for cultivation, and plowing and seeding are progressing. Early sown grain is making good growth. Green feed is plentiful and of excellent quality. Stock are in good condition. Olive picking continues and is nearly completed in some orchards. Oranges are being shipped in large quantities; they are of large size and superior quality. Prune drying is not yet completed in the vicinity of Guinda.

COAST AND BAY SECTIONS.

Cool, cloudy weather prevailed most of the week, and rain fell in all sections. In some of the northern districts the rainfall was unusually heavy, interfering with farm work and causing considerable damage to corn and potatoes by overflow. Frosts occurred in many places, but caused no injury except to tender vegetation on low lands. High northerly winds prevailed in some sections, drying the soil rapidly. Plowing and seeding are progressing. Early sown grain is looking well, but would be improved by warmer weather. Green feed is good and plentiful. Citrus fruits are doing well.

SAN JOAQUIN VALLEY.

Partly cloudy and cool weather prevailed during the week, with generous rain in the valley and snow in the high mountains. Frosts, heavy in some localities, occurred on several days, but no damage was reported. The rain was beneficial in preparing the ground for plowing and seeding, which is now progressing rapidly. The last of the grape crop is being shipped to the wineries. Fruit drying is over, except in a few places, where artificial means are being employed. Citrus fruit is ripening rapidly and being shipped in large quantities. The fruit is of excellent quality. Green feed was greatly improved by the late rain and is making rapid growth. Stock of all kinds are reported healthy, and in most places in good condition.

SOUTHERN CALIFORNIA.

Warm days and cool nights continued during the week, with light to heavy frosts in many places. No damage by frost has been reported. The rainfall was general throughout the south, and was very beneficial to all farming interests. Heavy snow fell in the mountain districts. Some of the raisin growers in San Diego county failed to stack trays before the heavy rain on the 19th, and it is probable the raisins were slightly damaged. Oranges are coloring rather slowly, but picking has commenced in some places, and the first shipment from Riverside was made on the 22d. Lemons are being shipped from San Diego. Walnut picking at Anaheim is completed; the yield is about the same as last year and quality good. Plowing and seeding are in progress.

EUREKA SUMMARY.—Warm, sunny weather since the rains has greatly improved pastureage. Plowing is progressing slowly. Apples are all gathered; yield estimated about 20% below average.

LOS ANGELES SUMMARY.—Plowing, seeding and orchard cultivating in full progress. Grass growing finely. Cold at close of week, with frost; tender vegetation injured. Frost not earlier or more severe than in previous years.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, November 25, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	.00	12.84	10.16	9.20	60	36
Red Bluff.....	.00	10.02	5.65	4.83	66	36
Sacramento.....	.00	3.63	4.00	3.34	58	32
San Francisco.....	.00	3.68	4.35	3.35	60	46
Fresno.....	.00	2.64	1.71	4.31	53	32
Independence.....	.40	.78	1.09	1.22	48	26
San Luis Obispo.....	.12	3.78	3.94	3.01	64	32
Los Angeles.....	.08	2.45	2.46	2.03	66	38
San Diego.....	.30	2.47	.75	1.14	64	44
Yuma.....	.20	.71	.22	1.22	72	34

THE RANGE.

Summer Ranges of Western Nevada Sheep.

NUMBER IV.

By P. BEVERIDGE KENNEDY and S. B. DOTEN in Bulletin 51 of the Nevada Agricultural Experiment Station at Reno.

Following the discussion of the forage plants shown on the first page of last week's PACIFIC RURAL PRESS, the authors proceed as follows:

WILD CARAWAY (*Ataenia gairdneri*).—The wild caraway grows from 1 to 3 feet high, with a solid, thick, tapering root, about 1 inch long, a few parted

rather moist ground in partly shaded locations. The sheep are exceedingly fond of it, leaving only a very small portion of the stem.

BREWER'S ANGELICA (*Angelica Breweri*).—A tall, stout-stemmed plant, with large toothed leaflets and a strong thick taproot. The white flowers are in large, spreading clusters, sometimes 6 inches across, on the ends of the stems. It was found quite abundantly in the valleys on Talbot's range, between Summit Soda Springs and French Meadows. The entire plant above the ground is readily eaten by sheep, but they are particularly fond of the flowers. The leaders in the band run from plant to plant, biting them off and eating them ravenously. Mr. Talbot considers the plant very good feed, but was inclined to believe that the roots were poisonous. A picture of this plant is given herewith.

BIG ROOTED PARSLEY (*Leptotaenia dissecta*).—A stout, coarse plant, with very thick roots 2 to 3 inches in diameter, and finely divided leaves. On the ranges near Webber lake the sheep were seen to eat this plant down to the ground with much relish. The strong, thick, heavy, oily root, which extends deep down into the soil, was, of course, left uninjured. It was not common enough on the ranges visited, however, to be considered of especial value.

FREMONT'S DAISY (*Aster Fremontii*) AND **ROUGHLEAVED DAISY** (*Aster integrifolia*).—These two daisies, of which pictures are given, formed the main sheep forage on the hillside and mountain meadows on Mr. Talbot's range. The leaders in the band of sheep hurry along picking off the flowers; those following eat the leaves and stems until nothing is

This plant is common in the Sierra Nevadas visited, up to 8000 feet altitude. It grows a foot or two high, with finely divided leaves and whitish flowers. The plant has a rather unpleasant odor. Our observance was that sheep would eat it, but did not seem to be particularly fond of it. According to Prof. Coville, this plant is "a favorite feed of sheep found in a great variety of situations, usually in open ground. It is very eagerly sought after by the sheep in spring, but later in the season it becomes dry and less palatable." Mr. Jared G. Smith speaks of it as follows: "In this country it is usually considered a weed, but in Europe, and especially in England, is held to be a very valuable addition to sheep pastures."

MEADOW SAGE (*Artemisia vulgaris*, var. *Californica*).—This plant grows about 2 feet high, with notched leaves, which are green above and white-cottony beneath. It was found quite abundantly on the outskirts of the meadows on Talbot's range. Sheep readily eat the leaves, but do not seem to care for the stems and flowers.

TARWEED (*Madia sativa*).—An annual plant growing from 1 to 3 feet high, with a rank odor, and sticky leaves and stems. It was found abundantly on dry hillsides in the sagebrush country around Newcomb lake, Nevada. According to Mr. Jared G. Smith, "Its chief merit is its rapid growth. It is cultivated in the arid southwest and California, and makes a palatable and nutritious food for sheep. An excellent lubricating oil is extracted from the seeds."

THE BOTANIST.

Concerning the Fog Fruit, *Lippia nodiflora*.

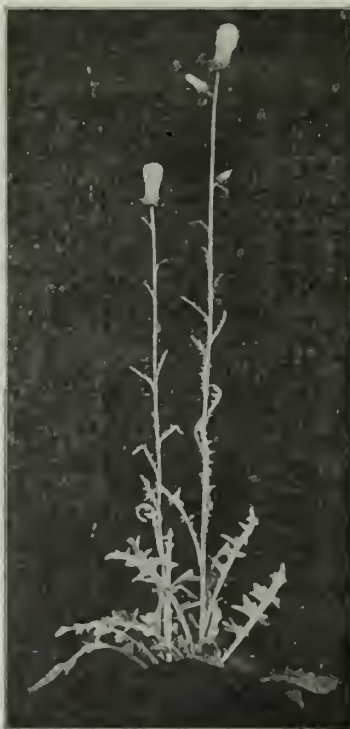
TO THE EDITOR:—The PACIFIC RURAL PRESS of November 1 contained an article by Dr. Franceschi, entitled "The Introduction of Lippia." In justice to myself I desire to state briefly through your columns the facts of the case as I understand them. In the



Fremont's Daisy. (*Aster Fremontii*)



Brewer's Angelica. (*Angelica Breweri*.)



Sierra Thistle. (*Cnicus occidentalis*.)



Rough-Leaved Daisy. (*Aster integrifolia*.)

leaves and clusters of white flowers on the ends of the stems. On the hillsides in the region of Webber lake, this plant was very abundant, sometimes forming large, dense white patches covering the ground. When a band of sheep comes to one of these patches every plant is eaten off clean. The herders consider it a valuable plant.

LOVAGE—WILD PARSLEY (*Ligusticum apiifolium*).—A rather stout plant, from 2 to 3 feet high, with a thick, fibrous growth at the base, and many strong roots. The leaves are plentiful and finely divided, and the white flowers are borne in clusters on the ends of the stems. It was found growing in considerable quantities in moist, rather shady places in the Webber Lake region, where it was greedily eaten by the sheep. The herders consider it one of the best forage plants on the ranges.

SIERRA SWEET CICELY (*Washingtonia occidentalis*).—This plant grows from 2 to 3 feet high, with many leaflets which are not finely divided into segments. It can be readily recognized by its long, thick, somewhat fleshy roots, which have a strong odor of anise. It was found frequently throughout the mountains on

left of the plants but the roots. Before the sheep are turned into a meadow of this kind it has the appearance of a field of small blue daisies, while by evening not a flower can be seen. The two species resemble each other very closely and grow side by side. Fremont's daisy predominates, and is about a foot high, with small, light blue flowers, while the rough-leaved daisy is somewhat coarser, with larger leaves, coarser flowers, and a few inches taller. These two daisies are valuable forage plants. Owing to the moist locations in which they grow, but little injury, if any, is occasioned by grazing year after year. The soil in these meadows is compact and not easily washed or disturbed, so that the roots are left uninjured and able to send up strong stems and leaves every year. As the flowers are eaten off, however, and hence the seed, no chance is left for the seed to be distributed and the plants established in other locations with similar conditions.

Some other species of daisy were noticed to be eaten by the sheep, but they did not occur in sufficient quantity to be considered of any practical value as forage.

YARROW—WILD TANSY (*Achillea millefolium*).—

spring of 1899 the Arizona Experiment Station obtained from Dr. Franceschi a quantity of the plant called *Lippia repens*. This species from the very start appeared at home with our climatic conditions, and gave every promise of becoming the useful plant it has since proved to be. During the fall of 1901 the Experiment Station received plants of *Lippia nodiflora* from Mr. Charles B. Allaire, San Antonio, New Mexico, who obtained his plants in April, 1900, from the Department of Agriculture at Washington. Messrs. Lathrop and Fairchild of the Agricultural Department secured the original stock of these plants from Cairo, Egypt.

These two lots of lippia—the one called *L. repens*, the other *L. nodiflora*—have been grown side by side at the Experiment Station grounds, and after a year's careful observation I have failed to find any marked difference. Where the two forms have been grown together on gravelly mesa soil I cannot distinguish the one from the other. It would seem, then, that both lots of plants should be called *Lippia repens*, or else both *Lippia nodiflora*. The Index Kewensis, which is a standard work on nomenclature, gives *Lippia repens* Spreng. as a synonym for

Lippia nodiflora Michx. The reason for this is apparent: *L. nodiflora* was published as a species in 1803, while Sprengel published on the same species some time later, calling it *L. repens*. Priority of publication is regarded as the fundamental principle of botanical nomenclature, and hence *Lippia nodiflora* Michx. prevails. Under these conditions I could not use the name *Lippia repens* Spreng. in the *Timely Hint*, issued last June, without being inconsistent with botanical nomenclature, as well as inaccurate.

I feel assured that the above statement will establish the integrity of the name *Lippia nodiflora*, and, this being the case, the occurrence of the species in the old world is admitted. The most eminent authorities, Engler and Prantl, in *Die Natürlichen Pflanzenfamilien*, say concerning the very general distribution of this species: "*L. nodiflora* is a common weed on banks and sandy shores in all the warmer parts of the earth." They also refer to a variety of *repens* from the Mediterranean basin "with more or less blunted bracts, which are slightly fringed on the margins." Should Dr. Franceschi's plant prove to be this form, it would then be known as *Lippia nodiflora repens*.

I have examined specimens of the native *L. nodiflora* from the southeastern coast of the United States, the very region in which Michaux collected his type specimens of the species a century before, and I regard the plants of *L. nodiflora* grown on the station grounds as identical in every essential feature with those from the Florida coast. Thus, with the possible exception of California, the distribution of the species as given in the *Timely Hint* is maintained. I also have examined the plants sent from the University of California, and agree with Dr. Franceschi that they are quite distinct from his plant, and I will add also from the plants growing along the southeastern shores of the United States. In view of this latter fact, I need not enter into a discussion concerning the plant from California.

As to the honors of introduction, I desire to say that, in response to Dr. Franceschi's advertisements, the Arizona Station did buy—and pay for—a considerable number of plants. This transaction was supposed, however, to be a commercial one, we having no knowledge whatever of priority honors in the matter. There is certainly no statement in the publication which would lead any fair-minded person to think that the Experiment Station was claiming the honors of introduction, and hence I can see no occasion for the use of the expression, "*sic vos non vobis*." To quote from the *Timely Hint*: "This Station will endeavor to furnish plants of *Lippia nodiflora* in limited quantities to all who may apply."

The "puzzling appellative," fog fruit, for which Dr. Franceschi expresses disrespect, has been applied to this and allied species for more than half a century by such botanists as Drs. Wood and Gray, and, later, Britton and Brown—a fact which amply justifies the use of the term in this connection. The occurrence of typographical errors in the use of the term is no good argument against its continuance.

J. J. THORNBUR,

Botanist, Experiment Station, University of Arizona.
Tucson, Nov. 14.

HORTICULTURE.

Gray's Gardena Dewberry.

TO THE EDITOR:—Mr. W. M. Gray, of Gardena, a berry grower of considerable success, and a man given to experimenting with different varieties of small fruits as they come out, purchased some few years ago five or six varieties of the dewberry. One particular vine of one variety was so markedly superior to all others he had that Mr. Gray selected this plant and grew a number of plants from it, and finding that each season it was superior he continued the propagation until in 1900 he had over an acre planted to this selected variety, and in 1901-2 about one and one-half acres. During the season of 1901, I was looking over the Gardena section and had heard so much about the wonderful dewberry growing at Mr. Gray's, that I called to ascertain the real merits of the fruit and was so impressed with its worth I then purchased his stock of plants, about 20,000, my partner and I planting out 5000 each, the balance being sold to various parties over the State. I asked permission of Mr. Gray to call it "Gray's Gardena Dewberry," and so advertised and sold it. I feel confident, from all I can ascertain from Mr. Gray and from looking over all other dewberries found, that this is a distinct, new and vastly superior variety to any other grown. The vine is vigorous, canes strong, leaves large and almost evergreen. The plants are wonderfully productive; fruit large and somewhat oval and greatly superior to *Lucretia* or others I have tested in flavor and general qualities. I have felt somewhat dubious about offering it to other nurserymen and planters as an entirely new sort originating with Mr. Gray at Gardena, as environment often works great changes in small fruits, yet I feel assured of its great worth and know that it is a wonderfully perfected fruit when compared to all other named varieties of dewberries. I am now

testing Austin's famous variety, but know that it can not excel this one, known as Gray's Gardena.

Mr. Gray gives the following concerning the yield: From one-half acre of two-year-old vines, we picked during spring of 1902 over 15,000 baskets of regulation size, 30 to a crate, which brought an average of \$1.55 per crate, and one acre of one-year-old vines yielded about the same proportion. As our season was very late, I received less per crate than last year."

But just think of this yield: Over seven tons of fruit from one-half acre. Net price per crate, \$1.55; number of crates from half-acre over 500; income over \$775.

This statement of Mr. Gray's I have verified through the two agents who handled his fruit, Messrs. J. D. Robinson and Harry Robson, of Hughes' Market, Los Angeles, Cal.

This dewberry ripens its fruit very early, during the months of April, May and early June.

The plants grow best upon a rich loam and respond to abundance of water. Grow them upon a low trellis, not over 2 feet high; plant the rows 5 feet apart; plants 3 feet apart; put up two wires, one a foot from the ground, the other not over 2 feet—better 20 inches. Plant during December and January, although I had excellent results with March-planted vines.

E. R. MESERVE.

Burnett, Cal.

THE FIELD.

Business Methods in Farm Management.

By R. S. RAMSEY before the Southern California Farmers' Institutes.

It is an unfortunate and erroneous conception of the term "business" which ascribes exclusively to the so-called business world the necessity for applied business methods, and belittles the value of systematic and orderly arrangement of detail so far as it relates to the farm economy. In other words, the farmer has too long been considered a mere day laborer, working with his hands alone, instead of being accorded his rightful place in the sphere of practical, thinking business men.

This thought leads up to the truth that the farmer has just as much right to be called a business man as has the merchant. Each is governed by the same law of supply and demand; each has a commodity which he seeks to convert into cash or its equivalent; each is affected by the state of the market; each is in the field for profit. All this being true, why should not the same recognized rules and principles of system and method be applied to the conduct of the farm as are applied with such wholesome results to the management of the mercantile establishment?

WHAT IS TO BE GAINED?—The purpose of this paper is to bring before the farmer as clearly as possible the advantages to be gained by applying to his farm management such up-to-date business methods as will insure the safety of his financial standing and afford him at all times a firm grasp upon the details of his business affairs. He already recognizes the value of system and method in the planting of his trees, the tilling of the soil, the distribution of his crops and in pruning, spraying, irrigating and fertilizing, and he is depriving himself of mental satisfaction and pecuniary profit when he fails to carry these same ideas of order and method into the strictly business part of his establishment.

There are doubtless many farmers who conduct their business affairs along business lines, and who recognize the necessity for such line of conduct; but there are many more who place a very low value indeed on a practical accounting so far as it affects their farm affairs, and who can see no particular use in burdening their minds with extra work in this connection. At first glance, indeed, it might seem a useless exercise of red tape for the farmer of average holdings to conduct an elaborate system of book-keeping when the total investment would not seem to justify it. Then, too, the farmer may argue that his income is uncertain and long drawn out and sometimes not drawn out at all, that he trades a large portion of his farm products for staple household necessities, thus doing away with the handling of much actual cash, and that his larger crops are often mortgaged before they are harvested to clean up the outstanding expenses of the year's work.

OBJECTIONS ANSWERED.—In answer to the first objection as to the red tape side of the question, it may be stated that this paper is prepared for the consideration of the progressive farmer who really desires to keep a comprehensive hold on his business affairs and to know at all times his exact financial standing, and who is not afraid of a little extra work or red tape in order to accomplish these ends. As to the complexity of the accounts, that is to be avoided at all hazards—simplicity and brevity are to be sought for always in this connection.

Answering the second objection—that but a comparatively small portion of the farm transactions may be cash—it may be stated that it matters not what the medium of exchange may be—it may be dollars or poultry or eggs or butter or milk or grain or fruit, so long as it possesses a value to the farmer,

so that this objection would not affect the matter in the least.

To the farmer who is content to make a notch in the side of the watering trough every time a calf or a colt is born, and who keeps his crop statistics, if he keeps any at all, on the inside of the toolhouse door, this paper will of course not appeal, and the best we can wish him is that his hired man, in a sudden fit of cleanliness, may not decide some fine day to whitewash the interior of the toolhouse.

How to Do It.—So much for generalities; now to get at particulars. In the first place, the farmer should have a book of general records. This book should be systematically headed and indexed, and should contain statistics of the following general and particular nature: Area and boundaries of land; outline of title; number of acres uncultivated as well as under cultivation; number of trees planted, together with variety, dates of planting and other useful information; stock statistics; matters relating to pruning, irrigating, cultivating, fertilizing, spraying, insectology; and, in short, all details of the farm that will aid the farmer in bringing his land up to the best possible paying capacity.

Take, for instance, the farmer who owns a small lemon orchard. If he has kept such a book of records as herein described, he is able to tell at a glance the total number of boxes picked since the beginning or for any one year or for any month of the year. He can ascertain to a nicety the percentage of first, second and third grade fruits that his trees have produced, and can apply his intellect to the investigation of methods of pruning, fertilizing or irrigating for the improvement of his stock. If he has, from time to time, experimented with the keeping qualities of his lemons, he can turn to his records and ascertain which pickings of the year were most given to decay and lay his plans accordingly for the remedying of the evil, if possible. He can tell from this book, his figures having been previously taken from the ledger, just what each particular grade netted him f. o. b. or on the trees, and which markets gave the best results, so that he may govern his future shipments accordingly. The advantages here described would apply with equal force to all departments of farm work where exact statistics would be of value.

THE BOOKS.—Turning now to the matter of book-keeping proper, it should not be supposed for a moment that the writer advocates for the farm a ponderous and complex set of books such as would be found in a large mercantile establishment, but they should be just as complete in detail. The more simple the method the better, so long as completeness of detail is kept in view. There are many farmers who, by reason of their environment and circumstances, are not expert accountants, and are not expected to be, but it is reasonable to suppose that there are but few who are not acquainted with the simplest principles of accounting, and these are all that are necessary for the ends sought. All that the farmer needs is a journal, in which he classifies his debits and credits (and in which, by way of keeping a few pages ahead of his general work, he may also very handily keep a cash account), and a ledger in which his final entries are recorded under their proper headings.

An account should be opened with every branch of the farm work that represents money or labor invested, and from which a gain or loss may be expected. For instance, the lemon orchard should have an account by itself, likewise the apricot orchard, the walnut orchard, the bean crop, the hay crop, poultry, horses, cows, sheep, hogs and many other departments of the farm which would readily occur to the farmer and which his business might demand. There should be an account kept with the general family or personal expenses, and with every individual or firm or thing with which the farmer may have occasion to do business.

Each year's business on the farm should be closed up at the end of the year, so that the gains or losses may be arrived at promptly, and in no case should the books be allowed to stand over unbalanced from year to year, for it is much easier to open a new set of books from the beginning than to unravel a tangled set.

THE OFFICE.—The farmer should have a room or a corner by himself, where he should have his desk or table and all letters or records belonging to his business. His letters should be answered promptly and carefully filed. Letter files are cheap in price, but invaluable in utility.

The writer believes that the local farmers' club could very profitably include in its programmes for discussion and debate this very subject now before us, and he can guarantee that if the farmer will conscientiously put into practice, consistent with his needs and circumstances, such recognized methods of system and order as are herein hinted at, and will faithfully adhere to those principles, he will be more than satisfied with the results obtained, and, like the advertisement for blank pills, "after once using he will never be without" his well-kept ledger and record books.

DURING the period that the railroad "colonist rates" were in operation this year, 30,000 homeseekers and visitors came to this State, and of this number the railroad officials say 5000 stayed.

THE SUGAR BEET.

Growing Beet Seed in Germany.

California growers who are struggling with the problem of profitably producing sugar beet seed to displace the imported seed, which is now so largely used by the sugar factories, will be interested in a statement which Consul H. W. Diederich, of Bremen, furnishes to our Department of State. We shall republish this statement in full. The California reader will note at once that the difficulties in soil and climate, which the writer concedes, are not the same difficulties which arise in California; also, that the elaborate wintering methods are out of place where there is no severe freezing of the ground and that California wintering methods must be much simpler and less expensive. With these comments we submit the record:

THE PROBLEM.—Is it impossible for men interested in the beet sugar industry in the United States to attach too much importance to every phase of the seed question. As is well known, most of the seed is imported, mainly from Germany and France, where specialists have for generations, through scientific methods of breeding and selection, succeeded in growing seed for beets with high sugar contents. But imported beet seed is expensive, and therefore efforts are being made in diverse sugar-producing countries to grow the supplies needed at home. The success thus far has been rather indifferent, particularly in the United States, as I am informed. Even if the grower has all the scientific experience necessary and is fully equipped as to details, he still has many more difficulties (those originating from our soil and climate) to contend with than the foreign seed grower. Thus it is a well-known fact that many kinds of high-grade seed will degenerate more rapidly in our own country than elsewhere; but of late years considerable progress has been made in this direction, and there is every reason to believe that ere long American home-grown beet seed will reach the standard that has been attained by the growers in Germany and France.

How THE RUSSIANS DO IT.—I desire to call attention to a method which has been employed by Russian growers of seed during recent seasons, and has proved very successful. They import German mother seed, from which they raise, in the course of two years, a crop of first-class beet seed with all the qualities of the original. In this way, it is said, they get the very best seed at half the cost. Some of our beet sugar people may consider it worth while to see if good marketable beet seed can not also be grown in our own country from imported mother seed.

The process used in Russia is very simple. The mother seed is sown with a machine drill in rows that are 10 to 12 inches apart, about 20 to 30 pounds to the acre. After the seed has sprouted and sprung up, the hoe must be kept busy, to prevent the weeds from growing up with the young plants. However, the plants are not thinned, as is done when crop beets are raised for sugar, but are allowed to grow until fall, just as they were sown. Before frost sets in, the small beets thus grown from the mother seed are dug out, together with their tops, and those which have some defect about the root or otherwise are picked out and thrown aside. The smooth and perfect ones are then put into pits, together with their tops, not more than three beets deep. The layers are put together, with their tops outward and the roots almost touching each other, and the entire row is gradually covered with earth, beginning with a little at the start, and adding thereto with increasing cold weather, until the covering becomes about a yard thick (in Russia), so that they may not suffer from rain, frosts, or insects. The soil in which the mother seed is sown should not be previously fertilized with fresh stable manure or with any commercial fertilizer of a strong nitrogenous character, but only with nitrate of potash or phosphoric acid.

REPLANTING THE ROOTS.—In the following spring the small seed beets are again taken out of the pits, again assorted, and planted 2 feet apart in soil which has been thoroughly fertilized with stable manure or nitrate of potash or phosphoric acid, and is in a high state of cultivation. When the seed beets are well started, they must be continually kept free from weeds. They are allowed to grow till the seed turns brown in color, when the stalks are cut and put into bundles. They remain out in the field until the stalks become dry, when they are brought to the barn and thrashed. As already stated, about 20 to 30 pounds of mother seed are sufficient for one acre. From this may be grown all the material needed to plant ten acres of seed beets in the following spring.

As to RESULTS:—In Germany, on an average 1700 to 1800 pounds of beet seed are harvested from one acre; therefore, ten acres will average 17,000 to 18,000 pounds. In other words, the 20 to 30 pounds of mother seed sown the first year will produce at the end of the second 17,000 to 18,000 pounds, equal to 160 sacks of beet seed, with which to raise crop beets for the sugar factory.

As much depends upon the proper condition of the soil, it is well to remark once more that the ground should be in good condition, i. e., thoroughly plowed and cultivated and kept free from weeds; but it must

not be at all nitrogenous for the cultivation of the mother seed during the first year. On the other hand, the soil in which the seed beets are planted in the second year should be in the very best state of fertility, from the application of stable manure and commercial fertilizers. By reducing as much as possible the nitrogenous matter in the first year, the growth of the small seed beet will be retarded, but will attain a very high percentage of sugar; and by pushing them the second year with strenuous fertilizers, they will yield a crop of fully developed seed. The best climate is that in which dry weather predominates in the fall. After the stalks have been cut, they should be protected as much as possible from the wet, otherwise the seeds lose their virtue of germinating. All seed that is well matured and has become thoroughly dry and has been brought to shelter without being exposed to damp weather will germinate quickly. Of course, there will be details in this, as in every other business, which will have to be found out by experience, but the general principles of this method of producing home-grown beet seed will be readily adapted to the variations of our climate and soil.

THE BALANCE SHEET.—The contracts for German mother seed sold to Russia are made on the following basis: The seed is furnished on the condition that the seller will ultimately get \$1.70 for every 100 pounds of beet seed harvested. To protect himself, he at the same time demands that if the crop should be a failure, he gets \$160 for each sack of 110 pounds of mother seed, of which \$119 per sack must be paid in advance, upon the delivery of the seed. At first, this seems to be an extravagantly high price, but when it is borne in mind that one sack of mother seed will yield ordinarily, at the end of two years, 1600 sacks of beet seed (worth at the present market price of \$8 per sack, about \$1100) it will be admitted that the cost is none too high, and that the experiment is worth trying.

THE POULTRY YARD.

Petaluma Poultry Interest.

Henry W. Kruckeberg, of Los Angeles, whom our readers know by sample in our columns at too long intervals, has visited the Petaluma district and gives in his journal, the Live Stock Tribune, a racy putting of Petaluma poultry propositions. He quotes Mr. Snow of the Petaluma poultry journal, with saying that "a recent census taken by the Petaluma Poultry Association gives us fully 850,000 White Leghorns doing business in this neck of the woods, which is, I believe, the largest aggregation of stellar attractions in web and feather of a single color known to the world. As a matter of fact, when it comes to White Leghorns, we claim to have 'the greatest show on earth.'"

"Almost a million hens shedding feathers to the four winds of heaven, and doing business at the rate of about 150,000 eggs per day. That would mean an egg for every two and a half people in San Francisco daily; a little over two eggs per day for every man, woman and child in Oakland; and about 100 eggs per day for each one of Sebastopol's population. Hence, enormous as is the production of hen fruit over a limited area of country, it is by far short of the demand. As a matter of fact San Francisco alone will take double the amount of eggs and poultry produced at present by the Petaluma breeders. Secretary Cromwell of the Petaluma Board of Trade reports that for the week ending Saturday, March 29, 1902, the local dealers of Petaluma handled 104,636 dozens of eggs, for which they paid \$15,118. Individual shippers sent to San Francisco 40,000 dozen eggs additional. Besides this, 600 dozen poultry were shipped. The total value of products for the six days was about \$18,000, or \$3000 per day. Multiplying the dozens by twelve, we note that in this one week there were produced 1,695,632 eggs. All this product finds a ready and exclusive market in San Francisco.

That Story About Making Artificial Eggs.

Readers will remember that elaborate story about making artificial eggs in California, which we have had several times to declare a josh, for some people seem determined to believe it. It is interesting to know how the yarn was spun and why. "Gleanings in Bee Culture" has this in its last issue:

We are pained to learn of the sudden death of Mr. S. F. Newman of Norwalk, Ohio. He was one of the most successful and intelligent bee keepers of northern Ohio. It was this same Mr. Newman who, years ago, started the story about artificial eggs, and how these eggs would hatch chickens, but that, unfortunately, the chemist had not discovered the ingredients for making feathers. Up to the time the story was promulgated the chickens had to be kept in a hot-house until some ingredient could be put in the artificial eggs to make clothes to cover their naked skins.

Mr. Newman, in putting forth this ingenious story, did so with the sole intention of offsetting the comb-honey lie by telling another so ridiculous and impossible that the dear public would discredit both; but in

this he was mistaken. So credulous was the undiscerning reader that he actually believed that the skill of the chemist was such that the principle of life could be put into a concoction of chemicals that could be molded into an artificial egg that would hatch featherless chickens.

California Poultry Interests.

TO THE EDITOR:—"The poultry business in all lines is further developed in the East than it is in the West and South. This is mainly due to density of population, and it is a remarkable fact that, as population increases in density, the prices of poultry of all kinds and of eggs steadily increase."

Thus writes a poultryman in one of the Eastern States. That the above is a true statement is evident to all observers. Therefore, those who forecast the future of the business in California are confident that the poultry business here will continue to increase for an indefinite time to come. For our beloved State will afford homes to multitudes of people yet beyond our borders. Again: If this business has attained such large proportions in the Eastern States, with their short summers and long, rigorous winters, who shall set a limit upon the future of this industry in this State, the climate of which is, par excellence, adapted to poultry raising?

Eggs are imported from Eastern States, it is true, in large quantities, and enormous numbers of our own production are placed in cold storage in our larger cities. But still there is always at this season of the year a good demand for fresh ranch eggs, and top prices rule. Evidently the future of the poultry business in this State is bright with promise.

The local consumption of eggs and fowls is enormous. The figures of exportations are not at hand, but there must be an outer demand for eggs which will increase with passing years for exportation to the islands of the Pacific and the farther north.

To quote further from the writer above cited: "This fact—rapidly increasing population—argues well for the permanency of the poultry industry. Eggs to-day bring higher prices in New England and in New York than they do in any other section of the country east of the Rockies. In the New England and Atlantic States people are becoming more fastidious and are willing to pay a high premium on strictly fresh eggs. There is no room to doubt that these same conditions will obtain in other sections of the country, and in the same, and even greater, extent, as the population increases and the American people find time to pay more attention to what they eat. It is our firm belief that the poultry business is destined to increase and improve and grow more profitable in all branches from year to year."

Here is the solution of a much vexed question which for long years has puzzled poultry raisers all over the world. It relates to the matter of raising cockerels or pullets at will. We quote: "My rule is so simple and easy anyone can have the means of practicing it. I am so well satisfied with it that I never trouble myself any more by testing the theories of others upon this subject. The rule is: 'After you have picked out the eggs for setting, by whatever other rule you may fancy, carry them to the nest in a hat, if you desire cockerels, or in a sunbonnet, if you would obtain pullets.'

Napa, Nov. 19.

A. WARREN ROBINSON.

THE DAIRY.

Protecting Butter From Mold.

The Department of Agriculture from Canada says: Reports have been received that a few lots of Canadian butter have been delivered in the United Kingdom somewhat spotted with mold on the butter paper and between the box and the butter. That has occurred on saltless butter. As mold is a tiny plant or fungus, it is important that butter makers and butter dealers should know by what means they can entirely prevent its growth on butter packages, butter paper, or on the butter itself.

Mold can only come from pre-existing mold, or from spores which serve the purpose of seed or fruit for its reproduction. If the spores be destroyed mold cannot begin to grow. The conditions favorable for its growth are a certain degree of dampness and a moderately low temperature—that is to say, a temperature below 60°. Some forms of mold grow at temperatures as low as 32° F., or the freezing point of water.

Formaline is an effective fungicide, or, in other words, it is a destroyer of fungi and of the spores of fungi. A weak solution of formaline is effective for the destruction of spores of mold. A good course for the butter maker to follow is to prepare a strong brine of salt, adding one ounce of formaline to one gallon of brine. The butter paper should be soaked in this solution. The inside of all butter packages should also be rinsed with it. The butter paper, while still wet with the brine containing formaline, should be placed inside the butter box and the butter immediately packed in it.

The brine containing the formaline will destroy all spores of mold on the butter paper and on the inside of the box.

Agricultural Review.

ALAMEDA.

TO A NEW USE.—Livermore Herald: The Spring Valley Water Co. continues to acquire farms and other real estate in the lower end of this valley as the occasion offers.

RECLAMATION.—Niles Herald: Since the district (No. 82) was formed 13,000 acres have been reclaimed in this county at an expense of over \$30,000, and have been accepted by the supervisors.

BUTTE.

CHICO WOOD.—Enterprise: Sacramento, Marysville, Woodland, and other cities south of Chico have been drawing heavily from this point for wood.

COLUSA.

TO FIGHT THE BONDS.—Williams Farmer: The taxpayers of Central Irrigation district have signed contracts with a firm of San Francisco attorneys to fight the payment of the bonds of the defunct district.

PROFITS OF RAISINS.—J. W. Brim realized over \$7000 from the crop from a little over fifty acres of vines, three-fifths of them Muscatels and the remainder seedless Sultanas and Thompson's. The price ranged from \$90 to \$120 a ton.

FRESNO.

DRIED FRUIT COMBINE FOR STATE.—Democrat: All over the State of California has gone the literature of the new Fresno County Dried Fruit Growers' Association. Almost without exception the orchardists have replied favorably to an alliance with the growers of this section, many taking steps to form local societies. The new association will syndicate all dried fruits with the exception of raisins, prunes and figs. It is intended in time to call a meeting for federation of local organizations.

COSTLY DELAY.—There has been much costly delay in receipt and shipment of immense output of second crop and other grapes to the wineries. T. E. B. Rice of Modesto reports seeing sixty wagonloads of grapes that had been waiting three days for cars.

THE winery at Kingsburg took in over 300,000 pounds of second crop Muscat grapes last Saturday and paid out over \$3000 to the farmers of that section.

CLOSE OF RAISIN SEASON.—The C. R. G. Association has named Nov. 30 as last day of delivery of raisins to be pooled. The association has paid to its members over \$2,250,000 to date.

TURNED MISSIONARY.—Hanford Sentinel: W. N. Harris has gone to Manitoba, Canada, to do missionary work for the Laguna de Tache Grant with asteropticon and lecture.

GLENN.

AT ORLAND.—Register: Sunday's storm recorded 4.30 inches, making a total for the two storms of 6.96 inches. Warm weather followed immediately, and the way everything has started to grow is wonderful.

HUMBOLDT.

RARE GAME.—Two bands of elk have been discovered in Trinity and Humboldt counties. An unusual number of white deer are reported in the same locality.

KERN.

CATTLE FROM ARIZONA.—Two thousand head of Arizona cattle from Wilcox have arrived here for pasture and 5000 more were to follow, on account of the drought.

KINGS.

THE USUAL KIND.—Hanford Sentinel: T. and L. Robinson have been sinking a 2-inch well on their ranch, 20 miles south of Hanford, in Kings county. Water rolls out 18 inches above the casing, with a good supply of natural gas. The well is 270 feet deep and cost \$200.

IMMIGRANT STOCK.—One thousand steers and 500 heifers, nearly all yearlings coming too, belonging to S. E. Biddle, Wint Mills and others, brought from Panhandle, Texas, and a very clean lot, have been taken to pasture on the lower Kings river.

LOS ANGELES.

NORTHERN EXHIBITS.—The Sacramento Valley Development Association is making active preparations for the mid-winter exhibit of agricultural products here.

NOTHING IMPOSSIBLE.—The Pomotonic, Azusa: Rumors as to the formation of an orange trust, at first considered more or less of a joke, are now attracting serious attention from those interested in the orange industry. Five years ago such a suggestion would have been received with incredulity, but in this day of mammoth combinations, nothing seems impossible.

MONTEREY.

FOR HOPS.—Soledad Cor. Salinas In-

dex: From experiments made away up in the hills there can be no doubt of the success of hop culture here.

NAPA.

MUTUAL INSURANCE.—Napa Register: The temporary organization for a farmers' mutual insurance company has been formed, A. Warren Robinson president, and Mrs. O. E. Borrette secretary.

ORANGE.

JUST AN AVERAGE FARMER.—Santa Ana Blade: On one farmer's wagon coming from the peatland was a fine dressed hog weighing nearly 200 pounds, ten crates of celery, and four sacks of string beans. The celery and beans were shipped by express to Los Angeles and San Bernardino, and the dressed hog was sold here. The load was just a sample of what the average peatland farmer has to offer in the way of produce.

COUNTY'S BEAN CROP has all been harvested and most of it shipped. Yield about 20,000 sacks on the San Joaquin ranch and 25,000 sacks in all, principally Limas.

SHIPPING PEAS.—Mrs. J. A. Huhn, of Orange, is shipping green peas from Bolsa to Riverside, Los Angeles and San Francisco.

RIVERSIDE.

ALFALFA ON A PUMPING BASIS.—Correspondence Bakersfield Echo: At Ethanac the Chase Nursery Company has a couple of thousand acres of level land almost identical in character with that about Delano. It is too frosty there for oranges, so they are planning to establish a colony for dairy and vegetable growing. Their land is being leveled, ditched and checked and some of it seeded to alfalfa. They were just putting up the sixth cutting. Baled alfalfa is now worth \$8 f. o. b. Ethanac. One field of 100 acres rented this year for \$15 per acre and the water charge was \$11 an acre more, but the tenant wants the farm again. The company uses Kern county oil for fuel, consuming thirty-four to forty barrels every twenty-four hours. Alfalfa land is held at about \$150 per acre under this system. In laying out its tract the company is thinking of adopting the village plan. That is, of laying out a small tract near the center in streets and blocks so that each farmer can build his home there, near neighbors, the school, the church and the park. They claim that isolation is avoided by the present-day American.

SACRAMENTO.

MORE IRRIGATION.—Record-Union: An effort, said to be backed by Eastern capital, is being made toward irrigation of 20,000 acres in the southern part of Placer and northern part of Sacramento counties, having Rocklin on their eastern boundary, from the North Fork of the American river.

STATE IMPORTS OF SHEEP.—Sutter Farmer: D. I. Waltz of Sacramento has taken nearly 40,000 sheep out of Oregon this season to the Island stubble fields below Sacramento, which in due course find their way to the market as mutton. Many more are yet to go forward, making about 60,000 this season.

SAN BERNARDINO.

IN DEMAND.—About Redlands wells are in demand; also, orange groves, more than ever, and at high prices. Redlands Facts says that C. E. Owens sold a 10-acre grove for \$15,000 and D. W. Sargent a 10-acre grove for \$17,500.

TRANSFORMING A CANYON.—Redlands Facts: Drillers are putting down a 12-inch well in search for artesian water in Reche canyon. So strong and widespread is the belief in success that a syndicate of capitalists has bought up 680 acres, to be put under irrigation from it, divided into orchard tracts, and is preparing to put up a pumping plant and a big reservoir. Three fine residences are being built and a survey for an electric railway made on the strength of it.

SAN DIEGO.

A FOREHAND FARMER.—Escondido Argus: T. J. Powers is the only raisin grower in the valley who has succeeded in thoroughly curing his fruit. He cut early. The fruit is fine, about 80% of the grape crop going into layers. The entire crop was about twenty-seven tons. The fruit is weighed at the trays and paid for when it leaves the packing house by Fletcher & Co. of Los Angeles.

COTTON AT CALEXICO.—The Government expert says the plants failed to mature.

WHERE THE BROOM CORN GROWS.—Imperial Press: J. C. Blackington, southeast of Imperial, has about thirty acres of fine broom corn, worth about \$200 per ton.

SAN JOAQUIN.

SAN JOAQUIN'S SEED BED.—Lodi Herald: Most of the early garden and flower seeds for Cox Seed Co. for next year are

planted. The Cox Co. has secured all the vacant land near Terminous.

EFFECTS OF BEANS.—The price of beans has enabled all the farmers of Terminous section to pay their bills and get on their feet in good shape for the next season. This season's business was settled early.

RECLAMATION IMPROVEMENTS.—The Krogh Manufacturing Co. of San Francisco has the pumping plant at Sargent slough well under way and is putting in oil burners and exceedingly large tanks for the storage of crude oil. It has the contract to rebuild the foundation of the pumping plants in Reclamation District 548, near Terminous.

CELERY EXPERIMENTS by the Rindge Syndicate on twenty-five acres of their land between Whiskey slough and Middle river this year were satisfactory, and a larger acreage is projected for next year.

SANTA BARBARA.

HEADING OFF A PEST.—Press: The farmers who have distributed squirrel poison liberally during the summer months believe they have accomplished much good.

SANTA CLARA.

IMMENSE EAGLES.—One of the birds stunned in an eagle fight over Santa Clara county and killed by hunters measured 10 feet from tip to tip of wings when spread.

IRRIGATION SYSTEM EXTENSION.—San Jose Herald: The Little Giant Ditch Co. is the name of the new irrigating concern which bids fair to revolutionize the irrigating business around Campbell. Page Bros. are responsible for it. It is a very considerable extension of their system.

THAT WAREHOUSE.—Suit against the Cured Fruit Association of California has been filed by Frank McArthur to recover \$1500, put up by McArthur toward buying the C. C. F. A. warehouse at Santa Clara, but finally conveyed to other parties, and by J. L. Mosher to annul and set aside the transfer of the packing house to the other parties.

SEED FARM.—Waldo Rohnert of Gilroy has leased three more ranches for seed growing, making six in all, and is said to be the largest raiser of seed in Santa Clara county.

COPPER MINE.—A copper mine that yields nearly pure copper has been discovered near Almaden.

A HOP CROP.—Gilroy Gazette: The hop crop on the Geo. Pinion ranch of sixteen acres at San Felipe, this season, turned out twenty-four and one-half tons, worth over \$12,000, or \$750 per acre.

BUILDING BUSINESS.—Mercury: The amount of building in San Jose is greater now than ever before known, and extends to all parts of the county.

SANTA CRUZ.

THE FARMERS' UNION at Santa Cruz has sold out to the Sperry Flour Co.

PAJARO VALLEY PROSPERITY.—Pajaronian: About 30,000 sacks of onions have been hauled over the Pajaro Valley Co. solidated Railroad this season, and from four to six cars per day of potatoes for southern points. Saturday, the 15th, about \$70,000 was paid out to farmers of this valley for beets delivered in October.

PROFITABLE PIGEON GROWING.—Pigeon raising is becoming quite an extensive industry in Pajaro valley and numerous persons have taken up that line with satisfactory results.

GREAT GAS WELL.—A 700-foot well four miles northeast of Watsonville, sunk for oil, produces dry gas in such quantities and force that its general use in small towns from Pacific Grove to Los Gatos is being commercially proposed.

SOLANO.

ABOUT DIXON.—Farm industry shows development in the direction of hand separators for cream and in poultry raising.

SUISUN VALLEY FRUIT UNION has decided to sell its packing house and appurtenances for \$850, or more.

RESULT OF ADVANCES.—Vacaville Reporter: Henry Bassford has begun an action against E. T. Earl, claiming title to the Alamo ranch, probably worth \$20,000, claiming that a deed given was a mortgage to secure \$6000 of advances.

SONOMA.

NEW WATER SUPPLY.—The new \$100,000 water works to be built on the Hearst tract, near Fairfax, will supply the surrounding country and the new townsite to be laid out.

MUD SHOES FOR HORSES.—G. T. Hickman of Healdsburg added, with bolts, blocks 8x12 inches to the hind feet of his horses, and so gathered the corn on his muddy land.

A LOCAL POWER CO.—The big dam for the Cloverdale Electric Light & Power Co., on Sulphur creek, in the mountains,

is completed. It is for a power house to generate electricity for a line to Cloverdale, Asti and Geyserville.

DUCKS.—Petaluma Argus: Ed. Cavanagh, Lyman Green, Charles Northrup, A. B. Hill and Colonel Fairbanks bagged 186 ducks in one day last week.

STANISLAUS.

BIG CHICKEN RANCH.—Modesto Herald: Ex-contractor Hamilton Gray, near Turlock, has 8000 White Leghorn fowls. A shipment of 1400 young roosters was made recently.

SUTTER.

OPENING FOR CAPITALISTS OR THE STATE.—Independent: The loss of corn, potatoes pumpkins and beans in District No. 70 is appalling. Many of the farmers not only have lost this year's crop, but will be prevented from putting in one for the coming year. Thirty thousand dollars will hardly cover the loss in beans and corn, and the loss in potatoes will also be heavy. The chicken corn raisers may save about half of their crop. The district is in a deplorable condition financially, with several breaks from last year still standing open, and no money and no suitable weather in sight to enable them to be filled. A canal through the district north and south will destroy much of the land; it is the only course to pursue that will do away with leveeing and save a part of the rich land. Many farmers living below the Tisdale weir are complaining of the seepage water killing crops.

CRUSHED ROCK ROADS.—Marysville Democrat: Through the adobe sections, which in the rainy season were heretofore almost impassable, are now, where the rock was applied, almost as good as a macadamized street.

TEHAMA.

FINE FEED.—Red Bluff News: W. E. Conrad of Paynes creek says he never before saw such a season for feed, plenty of good dry feed and new grass growing rapidly.

PRUNE GROWERS ANGRY.—San Jose Mercury: Prune Growers of Corning section are exercised over the alleged discovery that prunes shipped from there to Red Bluff have been packed in boxes labeled "Santa Clara Valley Prunes," and thus shipped East.

TULARE.

TO PUMP FOR ALFALFA.—Tulare Register: W. J. Browning is preparing to seed 200 acres to alfalfa east of Tipton and will undertake to do all the irrigating by pumping water. This will make a thorough test of the practicability of raising alfalfa on a basis of irrigation from wells.

A MILK RECORD.—W. B. Cartmill, near Tulare, has a cow that in the last eight months has given 6210 pounds of milk and last month produced 57.75 pounds of butter.

STRUCK HIM FAVORABLY.—Sultana Herald: A gentleman from Porterville was astonished to learn that the total cost of water in the Alta district averaged about 75 cents an acre a year, and stated that he must look over this part of the county with a view to investing. Such a price for water struck him very forcibly.

GRAPE YIELDS AT SULTANA.—The grape crop of the Anchor vineyard this year was as follows: From a 4-acre tract 54 tons of fresh Sultana grapes were picked and sent to the winery. From a 5-acre tract 10 tons of dried Sultana grapes were obtained. From a 110-acre tract 111 tons of dried Muscat grapes were obtained. The raisin pack this season will amount to about 1200 tons.

VENTURA.

OIL AND WATER DIDN'T MIX.—Ventura Democrat: The heavens opened and the floods came and the only thing that withstood the liquid avalanche was the oiled street.

YOLO.

HORSES IN DEMAND.—Kansas City horse buyers have been in northern California and Yolo trying to fill an order for 400 horses. They have purchased about 200 head in the counties north of Yolo.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam



A Safe Speedy and Positive Cure

The Safest, Best ELIXIR ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

In Mendocino's Woods.

Oftimes on these autumnal days,
 Ere the morning's sun rides high,
 I saddle old Ben, my noble steed,
 Then to the town near by.

Just as I turn into the road
 And down the lane to ride,
 Joy and Mirth come riding up
 To gallop by my side.

Around the turn and down the grade,
 Where the broad-leaved black oaks
 grow,
 The young squirrels scamper from the
 fields,
 And flies the cawing crow.

I hear the tinkling old cow's bell,
 In fields still wet with dew;
 The larks rise buoyant from the grass,
 Where last spring's blossoms blew.

At last I gallop into town,
 Old Barleycorn I greet;
 Joy and Mirth still stay by me,
 Companions on the street.

And with this jolly company
 I stay till twilight's gloom
 Has ushered in the coming night,
 And then I journey home.

But when I cross the little bridge
 And on my way to ride,
 Up comes sneering grim Remorse
 To ride close by my side.

He stays by me and will not go,
 He taunts me till I'm sore,
 Until I swear with Barleycorn
 To rove with him no more.

I swear by all the fabled gods
 To turn a bright, new leaf,
 To tread the narrower, straighter path,
 Before I come to grief.

* * * * *

But the very next time I go to town,
 Old Barleycorn I see,
 Joy and Mirth are left behind,
 Remorse rides home with me.

—From Lays of a Laytonville Minstrel.

Cordelia's Doughnuts.

"Cordilly, who's going to write the
 valedictory?" Grandma Doane's quav-
 ering, high-keyed voice floated down to
 Cordelia from the vine-shaded porch,
 as soon as she opened the garden gate.

"Lauretta Troll. You didn't think it
 was me, grandma."

Cordelia was not even grammatical.
 Her lapses mortified Arvilla; Arvilla
 was her sister, who taught English lit-
 erature and French in the Spirea Fe-
 male Seminary.

Cordelia's tone was light and gay;
 she switched her skirts over the border
 pinks and almost tipped over the spider
 lily in its pot on the steps.

"Eber Phillips is the class historian,
 and Lily Daggett is class poet," she
 added, with her young, flushed face up-
 turned to Grandma Doane's wrinkled,
 keen-eyed, old one.

Grandma Doane's Boston rock-
 ing-chair swung vigorously, and her knit-
 ting needles clicked sharply.

"There's never been one of our family
 graduated at the academy before with-
 out speaking a piece and having their
 name in the paper," she said, huskily.
 "John was first in his class, and was
 the poet. The ministers on the plat-
 form shook hands with him when he
 got through reading his piece. Arvilla
 was the valedictorian, and she made
 folks laugh and cry, and afterwards
 'twas printed in the paper. I sent
 three copies out West to your Uncle
 Amos's folks. When your Cousin Ruthy
 Ellen graduated, she played two pieces
 and sung and folks threw bouquets to
 her. And her name was in the
 paper."

Cordelia, with averted face, played
 with a tendril of the hop vine.

"And my name will only be in the list
 of graduates," she said, lightly. "But
 grandma, it will be almost at the head
 of the list."

"Will it? Will it?" said grandma,
 eagerly; and rocking and knitting came
 to a full stop.

The girl turned a mischievous face;
 grandma's ears were too dull to hear
 the thrill in her voice that told how
 near were her tears.

"It begins with a D, you know,

grandma; the list is arranged alpha-
 betically!"

She whisked off with a gleeful little
 laugh, and grandma groaned.

"She's the first one of our family
 that didn't want to be somebody," said
 grandma to herself despairingly. "She
 hasn't a mite of pride—not a mite. All
 she wants is to scrub up and do a bak-
 ing, and that's all she ever will do!"

Grandma's murmur had reached Cor-
 delia's mother's sharp ears, as she
 moved briskly about the kitchen, and
 had brought a vivid color to her high
 cheekbones.

"I don't know as I expected that all
 my children would be as smart as John
 and Arvilla," she said, with a touch of
 sharpness in her tone.

Everyone knew that Mrs. Orpha
 Doane was a very ambitious woman,
 whose heart was set upon her children's
 success in life.

"Cordelia is a good girl, if she isn't
 as smart as some. And she has made
 over her old white muslin for a gradu-
 ating dress so that it looks real stylish.
 It goes 'way ahead of anything that
 Miss Fillori could do."

"She might apprentice herself to
 Miss Fillori," said grandma, sarcas-
 tically.

Grandma did not think that dress-
 making was good enough for any of
 "our folks."

Cordelia's mother set her lips tightly
 together and stepped more heavily
 about; silence was the only art she
 knew when it came to "getting along"
 with grandma. But the girl's voice
 called gaily from the sitting room—
 gaily, yet with a purposeful ring, as
 well:

"I have thought of it, grandma.
 Sometimes I believe I have it in me.
 But it takes real genius to be a dress-
 maker nowadays. Besides, Miss Fil-
 lori wouldn't have me. She has her
 niece."

A moment after the sitting room door
 closed sharply and there was a rush
 up the back stairs. It did not inter-
 rupt grandma's grumbling monologue
 about girls who had no proper pride
 and would turn out like Deborah Gil-
 key, who married the hired man.

An hour after, Cordelia, prone upon
 her bed, raised a flushed and tear-
 stained face from the pillow at the
 sound of her mother's voice.

"Cordelia, I wish you'd come down
 and make a batch of your doughnuts.
 The Scutazy minister and his new wife
 are sure to stop on their way home
 from conference; and he sets so much
 by your doughnuts, because they are
 the only ones that he can eat. And
 the plum cake is getting kind of
 dry."

Cordelia bathed her face and put on
 her long-sleeved apron mechanically.

"If I do say it, there's nobody that
 can make doughnuts like Cordelia," her
 mother was saying when she entered
 the kitchen. "I don't know how 'tis,
 but I can't make them myself so they
 don't soak the least mite of fat, no
 more'n if they had never seen a fry-
 ing-pan, and are most as light as sponge-
 cake. Seems as if cooking came by
 nature to some. Don't you remember
 how the stated supply that stopped
 here said your doughnuts cured him of
 dyspepsia, Cordelia?"

There was scarcely any intention of
 praise in these remarks of Mrs. Doane,
 or of refutation of grandma's asper-
 sions. Culinary skill was not very
 highly regarded in Oronoco. Mothers
 were ambitious to have their daughters
 acquire "accomplishments" rather
 than housewifely skill. And this was
 especially true of the Doane family.
 Mrs. Doane was thinking of her pros-
 pective guests, and the pleasure of
 having something nice for supper,
 rather than of celebrating her young-
 est daughter's ability as a cook. But
 grandma called out, shrilly:

"She needn't think it is any feather
 in her cap! Anybody can make a good
 mess of fried cakes."

Of course, anybody could. Cordelia
 only felt a little bitter scorn of her
 skill in doughnut making as she brought
 out the frying basket.

"Delicious! I should like to have
 people who object to fried things taste
 these," said the new wife of the Scut-
 azy minister. "If I were only keeping

house I should beg you to give me the
 recipe. O, Miss Doane, I wish you
 would send it to the K. City Eagle.
 My brother is one of the editors, and
 he is distracted with the woman's page.
 A great deal is made of the culinary
 department, and people will send such
 unreliable recipes. Prizes have been
 offered for the best family menus, and
 one or two that have been sent in are
 published daily, accompanied by the
 recipes. Then follows an avalanche of
 correspondence and a great number of
 visitors, complaining that the recipes
 are unsatisfactory. The editors are
 very anxious to get recipes that have
 been tried and are really valuable, be-
 cause the woman's page, and especially
 the culinary department, is becoming
 quite a feature of the paper."

"I should have a chance of getting
 my name into the paper, shouldn't I,
 grandma?" said Cordelia, mischiev-
 ously.

"Doughnuts! Cat's foot," said
 grandma, who was no respecter of
 persons, even of the Scutazy minister's
 new wife.

"I think I will ask you to give me
 the recipe, at all events," said the min-
 ister's wife, "since I hope to go to
 housekeeping next year."

Cordelia wrote out the recipe, ac-
 cordingly, in her very best hand, on a
 sheet of the dainty French paper which
 she had used for the graduation essay
 which had not been found worthy of a
 reading, and the minister's wife made
 her husband put it carefully into his
 sermon case.

The next day Cordelia wrote out
 recipes of all the things that, as her
 mother said, she made better than any-
 body else, in a neat little book. But
 she had too much on her mind to think
 much about cooking, and she did not
 believe that the city editor could really
 want her recipe for doughnuts.

It was but scanty comfort to wear
 the prettiest dress in the hall, even if
 one had cut and made it with one's own
 hands, while one was oppressed by the
 mortifying consciousness that she was
 the first Doane to be graduated with-
 out a part and prospects. Arvilla,
 when she was graduated, had already
 received her appointment to teach in
 the Spirea seminary. John had passed
 his entrance examination to college
 with great triumph, and Cousin Ruthy
 Ellen had been offered a salary to sing
 in a Kansas City church.

Old Mrs. Keeper, down on the shore,
 had offered Cordelia \$2.50 a week to
 keep house for her; that was her only
 opportunity! She said she didn't know
 but she should accept the offer, although
 grandma wept that one of her posterity
 should think of being a "hired girl."

Cordelia was not needed at home.
 She said she could be contented enough
 if she were; she knew she wasn't ambi-
 tious like the others, but she wasn't
 going to just "hang on"—especially as
 they had been obliged to sell a wood lot
 to get along, every year since their
 father died. It was not necessary to
 be smart in order to understand that
 before long there would not be any
 wood lots to sell.

Grandma wept, but said she didn't
 expect anybody could get the better of
 Cordelia's chin—which was indeed a
 square and large-boned little member,
 betokening a strong will. One day
 grandma—who scorned culinary skill—
 slyly seized upon Cordelia's recipe book
 and carried it to her own room; and
 late into the night her lamp burned—a
 wholly unprecedented thing, as was
 shown by the excitement of the birds in
 the old elm tree just outside her win-
 dow—while she copied toilsomely, in her
 cramped, old-fashioned hand.

One day, about a month after the
 academy exhibition, Cordelia received
 a letter from an associate editor of the
 K. City Eagle, thanking her for the
 recipe that she had sent them. "Cor-
 delia's doughnuts" had been very highly
 praised, he wrote. A man had come in
 a week after the recipe was printed, to
 say that his wife had lost it and he
 must have another copy of the paper.
 This woman had told so many of her
 neighbors of the remarkable excellence
 of the recipe that the demands had
 almost forced them to print another
 edition of the paper that contained it.
 Would Miss Doane kindly favor him

with any other recipes of equal reli-
 ability that she might have?

Cordelia read the letter aloud to the
 family. Arvilla and John were at home
 and Ruthy Ellen was visiting them.

"The queer part is that I didn't send
 the recipe," she said, with a bewildered
 look. "I didn't think that a doughnut
 recipe was worth the while. And I
 didn't want grandma to be any more
 ashamed of me than she is. The Scut-
 azy minister's wife must have sent it.
 I shouldn't think she would have called
 it 'Cordelia's doughnuts.'"

Cordelia was blushing brilliantly.
 She scarcely knew herself whether it
 was with pride or shame.

"What should she have called it?"
 cried grandma, shrilly. "Maybe you
 would have liked to have it printed out,
 'Miss Doane's doughnuts.' Your grand-
 father had a church named after him,
 and your great uncle had a library. I
 ain't going to have the name of Doane
 in the paper long o' doughnuts. Land!
 Who can't make a batch of doughnuts?
 Marily Jepson, over to the Falls, has
 got a piece of poetry in the paper with
 her name printed out over it. And
 Jepson's never were anybody, since the
 world began."

"The Eagle is welcome to my whole
 recipe book, if it wants it. But I
 shouldn't have sent them the doughnut
 recipe," said Cordelia.

Grandma suddenly raised herself to
 her full height—it wasn't much. She
 was but a tiny old woman and her little
 black eyes snapped.

"No, you wouldn't have! You haven't
 got sense enough. Cordilly Doane!"
 she cried, in her thin, quavering old
 voice.

Mrs. Doane, in the background,
 shook her head at Cordelia. One had
 to "get along" diplomatically with
 grandma.

Cordelia did send her recipe book to
 the K. City Eagle the very next day,
 and with it the directions for making
 over an old silk dress in a novel and
 effective way that she had discovered,
 and for making a window seat, as she
 had made one for her room out of
 materials that no one would have
 thought of using. She said those were
 things that she really did not know how
 to do, and if that distracted editor—the
 minister's wife's brother—could
 find a use for them in his woman's page
 he was quite welcome.

A week or two later she packed her
 trunk and set out, in Jeremy Pine's
 farm wagon, sitting on her trunk be-
 cause Jeremy calculated that the seat
 might slump in with two on it, to keep
 house for old Mrs. Keever on the shore
 road.

Grandma wept again at the specta-
 cle, but she said she "expected Cor-
 dilly was just what the Lord meant
 her to be when He gave her that
 chin."

Jeremy Pine stopped at the postoffice
 on the way and brought a letter out to
 Cordelia. She finished reading it for
 the third time, and pinched herself to
 be certain that she was Cordelia Doane
 just as Jeremy turned into the shore
 road. Then she astonished her driver
 by jumping out and asking him to tell
 old Mrs. Keever that she must hire
 Martha Jellison if she didn't hear from
 her within three days, and to store her
 trunk in his barn until she sent for it.
 Then she ran as fast as she could to the
 railroad station and jumped upon the
 K—City train just as the engine
 shrieked.

In the cars she read the letter over
 again. It was from the same editor
 who had thanked her for "Cordelia's
 doughnuts." He now asked her to call
 at his office. The Eagle was seeking an
 editor for its Woman's Page. Her do-
 mestic abilities, and also her capacity
 for writing descriptions in terse and
 simple English—think how one could
 crow over grandma with that!—to-
 gether with what his sister had told him
 of her, led him to think that she might
 acceptably fill the position!

Cordelia went and saw and conquered
—of course, since she was just the right
 person for the place and the editor was
 a man of discrimination.

"There's one very queer thing about
 it," said Cordelia, in the bosom of her
 family, when the chorus of congratula-
 tion had begun to wear a little thin.

"I stopped at Scutazy to thank the minister's wife, and she said she didn't send the recipe. She meant to, but forgot it. She had been ill with a fever and it was one of the things that worried her in her delirium—that she had not sent that recipe. But she must have sent it and then forgotten it!"

A grim little chuckle came from grandma's corner, but no one observed it. Grandma was always making queer noises in her throat.

"I always told you 'twas better to have your name in the paper 'long to doughnuts than not to have it there at all," she said, unblushingly.—Sophia Swett, in Waverly Magazine.

As Twilight Lingers.

When twilight lingers in the lane
And all the woods are sweet and cool,
Afar my wand'ring thoughts go free,
Like birds that fly from hill to pool.
They soar beyond the cares of life
And all the duties grave and stern,
Forgetful of the constant strife,
And daily lessons each must learn.

They drift to where the distant hills
Bring out the glories of the sky
And paint with memory's tender tints
Departed hours that hidden lie.
Dear heart, to you a sweet refrain
Falls from my lips across the land
When twilight lingers in the lane,
And I amid the shadows stand.

—Louise Lewin Matthews.

Study of Individual Man.

"The twentieth century is going to recognize the importance of the study of the individual man," says Dr. Alex. J. McIvor-Tyndall, who is an advanced psychological student.

David Starr Jordan, the president of Stanford University and considered one of the most eminent educators of the age, also predicts that the educational system of the future will have in view the development of man as an individual. "To this end," he declares, "it is most essential that the first step toward proper education is to find out what each and every student is best adapted for."

Russel Sage, the great financier, also recognizes the value of a thorough knowledge of self, and in his "Advice to Young Men" he holds that a knowledge of human nature is of more value in every day life than a college education. "By whatever method and at whatever cost," Mr. Sage advises his readers, "learn to read character; study human nature."

That the Pope's oft-quoted truism, "The proper study of mankind is man," is becoming recognized in its true importance by the world's most advanced thinkers, is evidenced in the widespread interest in the science of palmistry. From a mere fortune-telling pastime the study has come to be considered as nature's index to the individual's character and tendencies.

It is this importance of individual development, and the fact that the moral nature or education is so largely given before the age of seven, that makes the work of mothers so important in determining the character of of the coming generation and of the world for peace, with intelligence and prosperity, or for war, with its ravages and darkness.

A Happy Father.

He says there is no pleasure
In all life's rapturous day
That's quite so sweet as listening
To what the children say.

—Alonzo Melville Doty.

THE WOMAN OF THE WORLD.—The woman of the world, in the truest sense, is one of the best fitted for successful home making. Tact, insight, dignity, grace and ready sympathy characterize her dealings with others, and nowhere are these qualifications of more value than in the home. Women's clubs are woman's opportunity for much that is ennobling to herself and to others. Like many other useful things, the privilege may be abused, and degenerate into mere dissipation, but such cases are exceptional.

DOMESTIC ECONOMY.

For the Kitchen.

PEAS AND ONION SALAD.—Drain stewed or canned green peas, and lay them on a clean towel to absorb the moisture. Add to them enough onion chopped fine to give a strong onion flavor. Mix a little salt and lemon juice with them, and let them stand in the ice box for half an hour or longer. When just ready to serve, pour over them a sour dressing of peanut butter made with the smaller quantity of water. Mix all together lightly, and serve on lettuce leaves.

HOW A SONOMA WOMAN USES PRUNES.—Wash as many nice prunes as you wish to cook; put in porcelain kettle with as little water as will possibly cook them. When very tender add your sugar and set off to cool; make as rich a paste as your conscience will allow; take the pits out of prunes and mash with a cook spoon; bake with one crust; while pie is cooking take a cup of cream and two tablespoonsful of sugar; whip to a stiff froth and spread over the prune pie. You will have to make two pies next time, for the "gude mon" will want a whole one to his lonely. Another nice dessert of dried prunes is: Cook as above, and when ready to serve put a couple of spoonfuls of whipped cream over each sauce dish. This is equally as nice as pie and less trouble, and is also good on any kind of dried fruit sauce.

SOME FALL SALADS.—Tomato Salad: This is a simple and at the same time enjoyable salad. Dip perfectly ripe tomatoes quickly into boiling water, then into cold water, after which lay them on ice until thoroughly chilled. Just before serving, peel and lay each on a lettuce leaf on an individual salad plate, or put them all together, each with its leaf of lettuce, on a large salad dish, then dip on to each a generous spoonful of sour salad dressing, with nut butter and let it run down on the opposite sides of the tomato, leaving the remainder of the tomato to show its beautiful color. One of the prettiest salads I ever saw had the tomato on a plate which shaded from a very light green in the center to a dark green on the edge, with borders of gilt near and on the edge of the plate. On one side of the tomato was a heavy spray of dark green parsley, and on the other side one not quite so heavy.

THE FRUIT OF THE VINE.—For those who still have grapes, it is perhaps not too late to put up grape juice, which is a very useful thing in many ways. There are several ways to put it up. Grape juice is very rich in sugar qualities, and rightly used is quite desirable. Taken as a beverage, however, it sometimes works on the kidneys too strongly.

1. Press the grapes in a wine-press, sweeten the juice, heat to the boiling point, and can at once. Pint glass fruit jars are the handiest, and are the least trouble to seal. Fit the rubbers on, screw the tops down snugly, and the wine is ready for use. The residue of skins and pulp may be cooked until soft enough to rub through a colander. Sweeten this pulp to the taste and cook down into marmalade, and a most delicious conserve will be obtained. 2. Those who have no wine-press may put the grapes on to cook, with just enough water to cover them, until both skin and pulp are tender. Set a large colander over a deep stone-ware jar and pour the mass into the colander. The juice will filter through into the jar below. The pulp and skins which remain may be made into marmalade. The juice in the jar, sweetened to the taste, is brought again to the boiling point and put up as before directed. This is the easiest method for most persons. Some fear that the juice will lose its flavor by the prolonged first boiling, but this is not the case. It suits most palates better than the wine-press-extracted juice, as the latter is so strong as to really need diluting before being used. If not squeezed, but allowed to drip naturally, the juice will be entirely clear, the pulp and skins being retained with the seeds.

Bottles may be used and cork covered with melted sealing wax, though the wax is apt to burn the hands, is hard to get on evenly over every crevice and is hotter work than canning by the ordinary method. The pint size holds more than enough for ordinary communion purposes.

TURKEY WAYS.—Turkey Patties: Mix three tablespoons each of butter and flour, add one saltspoon salt and one-half as much pepper. When melted pour in one cup of rich milk. Cook and stir until thick. Then add one cup chopped turkey, let simmer five minutes, then stir in one pint oysters and cook until they are plump. Fill the patty shells and serve.

Turkey Olives: The nicest pieces of turkey must be used for these. Cut in neat slices, spread each one with the dressing that is left, roll up tightly and tie or fasten with a skewer. Dredge with flour, salt and pepper, fry slowly in hot butter until a golden brown, then half cover with milk or cream and let simmer fifteen minutes longer. Remove the strings or skewers and serve on hot toast.

Turkey Scallop: Make a white sauce with the proportions of one tablespoon butter, one of flour, half cup broth and half cup milk, season to taste. Grease a baking dish and fill with alternate layers of finely chopped and seasoned turkey, breadcrumbs and sauce. There should be one pint of sauce to each cup of meat. The top layer should be of breadcrumbs mixed smooth with yolk of one egg, two tablespoons milk and one of butter. Cover the baking dish and bake in a moderate oven thirty-five minutes.—Mrs. L. M. Foote.

PORK MINCEMEAT.—Cook the pork in salted water until quite tender. When cold put through a sausage grinder. Pare and core some tart apples and chop rather fine. For every four pounds of meat add six pounds of apples, one glass of currant, quince or plum jelly, one quart boiled cider or good cider vinegar, with sugar added, one pint maple syrup, one and one-half pounds granulated sugar, two grated nutmegs, two teaspoons ground cloves, six teaspoons ground cinnamon and two teaspoons grated orange or lemon peel.

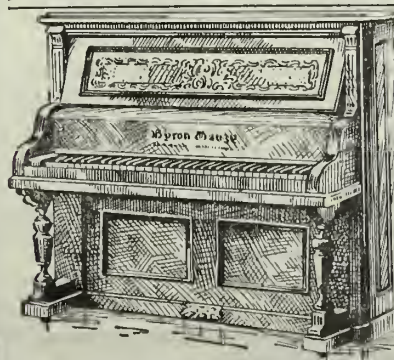
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Put the above ingredients over the fire in a preserving kettle and heat well without boiling. Then add four cups canned or preserved cherries and two cups currant jam. Mix all together and let remain over the fire five or ten minutes longer. There should be a very slow fire, or else have the kettle on the back part of the range. If more salt is needed beside that which was added to the water for boiling the meat, it should be added now. If the mixture is not sweet enough, add more syrup. Dried apples will answer very well when fresh apples are scarce. They should be ground through a meat chopper before being added to the meat. Dried cherries, raisins or currants may be used instead of the other fruits named.



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S. F. Market Report.

The Markets in General.

SAN FRANCISCO, Nov. 25, 1902.

NOVEL EXHIBIT OF MANUFACTURES.—A Seattle telegram says: One of the most comprehensive schemes ever formulated for the expansion of American commerce will be inaugurated soon, when the steamship Oregonian will sail with a party of American manufacturers and exhibits for a six months' cruise to China, Siberia, Japan, the Philippines, India, South Africa, Australia and the Hawaiian islands.

GRAINS.—The returns made by Bradstreets on wheat show that the crop in the world this calendar year was not an excessive one. Broomhall, London, reports that Australia will have to buy 240,000 tons.

The opinions of dealers in the principal wheat market of the country for the past five days are registered in the following tables:

CHICAGO WHEAT FUTURES.

	Dec.	May.
	Op. Cl.	Op. Cl.
Wednesday.....	73 3/4 @ 75 1/4	76 3/4 @ 77 1/4
Thursday.....	77 1/4 @ 78 1/4	77 1/4 @ 78 1/4
Friday.....	75 1/4 @ 76 1/4	76 1/4 @ 77 1/4
Saturday.....	74 1/4 @ 75 1/4	76 1/4 @ 77 1/4
Monday.....	75 1/4 @ 76 1/4	76 1/4 @ 77 1/4
Tuesday.....	@	@

CHICAGO CORN FUTURES.

	Nov.	Dec.	May.
	Op. Cl.	Op. Cl.	Op. Cl.
Wednesday.....	57 1/2 @ 58 1/2	58 @ 59 1/2	42 1/2 @ 43 1/2
Thursday.....	58 1/2 @ 59 1/2	59 1/2 @ 60 1/2	43 1/2 @ 44 1/2
Friday.....	@	58 1/2 @ 59 1/2	43 1/2 @ 44 1/2
Saturday.....	55 1/2 @ 56 1/2	56 1/2 @ 57 1/2	43 1/2 @ 44 1/2
Monday.....	@	54 1/2 @ 55 1/2	42 1/2 @ 43 1/2
Tuesday.....	@	@	@

APPLES.—Eastern telegraphic reports have it that thousands of barrels of fine apples have rotted on the ground in Connecticut this year for lack of coöperation and help, any kind of a barrel bringing 35 cents.

Two hundred cars containing 100,000 boxes of apples were shipped this season on commission to Porter Bros. Co., Chicago, by J. J. Hagerman from his South Spring orchard, N. M., near Roswell, on the Santa Fe. They were stored with the Western Cold Storage Company, and consisted of the following varieties: Ganos, Mammouth, Black Twig, Wine Sap, Arkansas Black, Missouri Pippin, Jonathan and others. These apples were grown at an elevation of 4000 feet and irrigation was employed. It is said that New Mexico apples are steadily free from insects or blemishes. This is the second crop of any size from the orchard of 66,000 trees on 800 acres, which are but nine years old. Last year 15,000 boxes was the entire output.

Portland reports are that winter apples raised near there are peculiarly affected with rot, so that their keeping quality is destroyed. The trouble is by some laid to smoke from forest fires. There are said to be, in southern and eastern Oregon and southern Idaho adjoining Oregon, 125 cars without possibility of present movement in a market that is dragging and unprofitable, for all but certain preferred kinds, at prices at Salem of from 30 to 50 cents per box.

It is estimated that 2,000,000 apple trees, chiefly of the winter varieties, have been planted in Washington this fall, chiefly in eastern Washington, where the late fall gives winter apples a high color.

DRIED FRUIT EXPORTS.—Paul Shoup, division agent of the Southern Pacific, is quoted as saying: "The dried fruit movement in Santa Clara county during October was the heaviest of any calendar month in the history of the valley. The export movement has not been confined to prunes, but has included all varieties of dried fruits. The European market has taken for consumption a greater percentage of green fruit, dried fruit, canned goods and apples than during any previous season. There is general belief among packers that the unusually heavy export shipments of this season have permanently opened a wider market for fruit grown in this valley in many sections of Europe. It is predicted that the European demand will next year be as great, if not greater, independent of the state of the European fruit crops."

In prunes, the Hollister Bee says that Boynton Bros. of San Benito county are dealing direct with Eastern houses, and others are selling and shipping to San Jose.

HAY.—Local reports there are that Butte county this year produced 15,000 tons of surplus hay, which is fully one-fourth more than ever before, and that several hundred tons of it were so hurt by the rains as to be unfit for baling. Hay has been in good demand at fair prices, and nearly two-thirds of that which has been baled has been either shipped or consumed

and the remainder stored for shipment during the winter and spring. One of the principal causes assigned for such a demand for hay from that county is the fact that nearly all of it is baled in the Magic press which hay dealers are said to prefer both for shipping and the local trade. Seven of these presses did nearly all of the baling in the county. One machine put out 2704 tons in 117 1/2 days, and another 2780 tons in 115 1/2 days, the latter an average of twenty-four tons a day.

ORANGES.—Los Angeles Times: More than 500 cars of Mexican oranges will be shipped to the United States markets this season. In the La Barca and Yurecuaro districts of the State of Jalisco alone the Mexican Central has been shipping from fifteen to twenty cars daily for the past three weeks. Many of the cars go direct to California, the consignments being made to fruit men of this State. The demand exceeds the supply.

Up to the middle of last week fifty-seven carloads of oranges have been shipped from the Tulare county citrus region, the Earl Co. having sent thirty-nine. Rud-dock, Trench & Co., the Fay Fruit Co. and A. Gregory & Co. are by the Lindsay Gazette reported to be buying f. o. b. at that point. Local shipping associations of growers strongly influence the character of the market at that point.

The San Dimas Lemon Association has been making record sales lately, one carload having brought \$1354 and another \$1400.

DRESSED MEATS.—The United States meat companies which, it was reported, recently invaded Great Britain by buying up marketing houses there, are further reported to be not doing well on account of low-priced meats from South America, the successful shipment of which by aid of refrigeration has recently been achieved. Argentina has also recently accepted British terms for shipment of stock on foot to Great Britain, which further complicates matters.

Goodall's Farmer, Chicago, says: For the eight months of the summer season—March 1 to October 31—the packing in the West has been approximately 12,025,000 hogs, a decrease of 3,045,000 compared with last year. Chicago alone packed 3,025,000 of the entire number, being 445,000 more than any other three points. The decrease was greatest (881,000) at Kansas City.

CELERY.—At Santa Ana it is reported that the demand for celery exceeds the supply. Although the growers in the peat land anticipated an unusual demand and planted accordingly, yet there is a considerable shortage. So far Los Angeles and San Francisco have taken the bulk of the local shipments. In about a week later varieties will come in and large shipments will be made to the Eastern markets. Orange county will ship about 2000 carloads of celery to the Eastern markets during the winter season. Experiments by the Rindge Syndicate in celery growing near Stockton this year proved satisfactory on twenty-five acres, and it is said the output from 100 acres may be expected next year.

NUTS.—Southern California advices from Fullerton are that for the walnut growers' associations the season of 1902 is the most successful on record, for the highest prices are being realized for the largest crop ever produced in the State.

George H. Pirie, manager of Dr. Adams' ranch, sold fourteen tons of their walnut crop, unbleached, recently, to a San Francisco firm, realizing 10 1/2c per pound all round. Other reports put the walnut market at 11 1/2c—probably jobbing prices f. o. b. California, though not stated so. It is expected that the Fullerton output will be 750 to 800 cars and the Orange county crop 140 cars, Guggenheim & Co. of San Francisco getting credit for taking forty cars. The crop is fully gathered.

HOPS.—London reports say that the London Hop Trade Association has offered a reward for the arrest of persons guilty of falsifying the record of hops in transit, and the New York Chamber of Commerce will be asked to help in ferreting out the malefactors. The charge is that official marks showing the true origin of the hops have been removed in the course of transit and fictitious ones substituted, so as to make inferior hops appear to have been grown in portions of the Pacific coast famous for producing high-grade hops and also misrepresenting the date of production.

SACRAMENTO RIVER CROPS.—Latest local reports of crop damage from overflow are as follows:

The greater part of the chicken corn is standing in District No. 70, and much cut is covered. Broom seed is selling at \$8 a ton in the field. One merchant bought twenty acres of chicken corn for \$100. All the pumpkins were destroyed and the bean crop, too. A conservative estimate of the loss in potatoes is between 12,000 and 15,-

000 sacks. The farmers on the east side lost \$25,000 worth of Egyptian corn by water. Further report is given in our "Agricultural Review."

RAISINS.—The very latest thing is seedling seedless Muscatel raisins, which are really undeveloped specimens of the grape, usually seedless but not always so, which has caused complaint from consumers. The seeded "seedless" are put up as a special brand.

POTATOES.—Winter potatoes are in the market in southern California, particularly at Los Angeles. It is reported that Wood, Curtis & Co. of Sacramento have succeeded in moving large shipments of beans and potatoes from Terminous, San Joaquin county.

OATS.—Conservative estimates of the oat crop of the Pajaro valley this season place the yield at 80,000 sacks. Of this amount 70,000 sacks are black oats and 10,000 red oats.

POULTRY.—A notable scarcity of turkeys is reported at Yuba City and Marysville. B. F. Darby of Palermo was reported to ship 200 dressed to San Francisco.

LIVE STOCK.—Good farm auction prices for horses are reported in Napa county. A span of unbroken three-year-olds recently brought \$120.

Produce Market.

EXPORTS TO ALASKA.—The U. S. custom house records here show that between May 20 and Sept. 30, 1902, the following totals of agricultural shipments of record went to Alaska:

	Value.
Eggs, 38,688 doz.....	\$9,751
Fruits, green, ripe and dried.....	16,154
Fruits, canned and preserved.....	22,027
Meats, fresh, cured and canned.....	59,181
Butter, 239,470 lbs.....	59,358
Cheese, 24,799 lbs.....	3,279
Milk.....	17,322
Beans, peas, onions and potatoes, 18,114 bushels.....	17,128
Other vegetables, fresh and canned.....	35,169
Wine, 556 doz. bottles.....	3,258
Wine in bulk, 3253 gals.....	2,101
Wool wearing apparel.....	18,549
Other manufactures of wool.....	2,033
Total.....	\$265,310

WHEAT.

The tables below show the active demand for and excited local trading in that has existed at this point during the past five days, and seems likely to continue for some time to come. The high state of this market, out of touch with Chicago and other world markets, is ascribed solely to the demand from Australia. Wheat in this market, high as it is, is on the whole more accessible here than elsewhere, it seems. Grain charters have gone to the extremely low figures of 10s 3d, and even 10s it is reported, to Australia, and 12s for elsewhere, French ships being the principal gainers by reason of the subsidy paid them by the French government. There has no doubt been much buying activity in the country, and some justification for the idea so persistently urged by some of the larger daily papers, that the present soaring price of wheat in the San Francisco market, both future and cash, is in part due to the withholding of it from market by farmers, may be found in the fact that at Williams, Colusa county, within the last two weeks six farmers named by the Williams Farmer sold about 50,000 bags, 24,000 of them from the Stovall-Wilcoxson Co., at what is locally reported as "in the neighborhood of \$1.20," at shipping point, freight to tidewater to be added. On the contrary, advices from one of the largest wheat raising sections of the lower Sacramento valley direct us from those who are in position to be pretty well posted on at least some features of the situation say: "In the last few weeks we have made special inquiries for the PACIFIC RURAL PRESS, and have found out that there is but a small percentage of grain remaining in farmers' hands. Even most conservative farmers sold during last summer before the present prices. If the big dealers don't own the grain now we don't know who does. As regards barley there is absolutely none in first hands now. We don't take much stock in the squeezing of the big four. We think it is a put up job from beginning to end, and that the Examiner is well paid for continually harping on the question. We think that this grain is still in the hands of the big four and that they will make independent fortunes out of the deal."

Cash wheat has risen from \$1.35@1.38 1/2 to \$1.41 1/2@1.45 for No. 1, and from \$1.40@1.42 1/2 to \$1.47 1/2@1.50 for milling, and the course of futures has been as follows:

SAN FRANCISCO WHEAT FUTURES.

	Dec.	May.
	Opened.	Closed.
Wednesday.....	\$1 35 1/4 @ 1 36 1/4	\$1 37 1/4 @ 1 38 1/4
Thursday.....	1 35 1/4 @ 1 36 1/4	1 37 1/4 @ 1 38 1/4
Friday.....	1 38 1/4 @ 1 39 1/4	1 39 1/4 @ 1 38 1/4
Saturday.....	1 38 @ 1 40 1/4	1 38 1/4 @ 1 40 1/4
Monday.....	1 43 @ 1 42 1/2	1 42 @ 1 43 1/2

BARLEY.

Has kept pace with wheat, partly on account of its scarcity. Cash stock in the past five days has risen from \$1.20@1.22 1/2 to \$1.25@1.55@1.60 for the several grades to \$1.22 1/2@1.26 and \$1.27 1/2 for feed and brewing shipping grades respectively, there being no rise in Chevalier, it is explained by some, because there is no trading stock left. As the table of futures show, the enhanced price began with the week.

BARLEY FUTURES.

	Dec.	May.
	Opened.	Closed.
Wednesday.....	\$1 20 1/4 @ 1 20 1/4	\$1 24 1/4 @ 1 25 1/4
Thursday.....	1 20 1/4 @ 1 20 1/4	1 24 1/4 @ 1 25 1/4
Friday.....	1 20 1/4 @ 1 20 1/4	@
Saturday.....	1 20 1/4 @ 1 20 1/4	1 25 1/4 @ 1 26 1/4
Monday.....	1 22 1/4 @ 1 26 1/4	1 27 1/4 @ 1 30 1/4
Feed, fair to good.....		1 22 1/4 @ 1 25 1/4
Brewing and shipping.....		@ 1 27 1/4
Chevalier, fair to choice.....		1 55 @ 1 60

OATS.

Oats and other grains have remained firm, with slightly higher cash prices quoted in some quarters for oats.

White Oats.....	1 30 @ 1 35
Black, for feed.....	1 17 1/4 @ 1 22 1/4
Black, for seed.....	1 30 @ 1 40
Red, common to choice.....	1 30 @ 1 30
Red, fancy.....	1 30 @ 1 40

CORN.

Large White, good to choice.....	1 42 1/4 @ 1 50
Large Yellow.....	1 40 @ 1 50
Small Yellow.....	1 57 1/4 @ 1 60
Egyptian, Brown.....	1 20 @ 1 25
Egyptian, White.....	1 30 @ 1 40
Millers are paying for carload lots:	
Western, sacked, yellow.....	@ 1 20
Western, sacked, white.....	@ 1 30

RYE.

Good to choice.....	1 10 @ 1 12 1/4
---------------------	-----------------

BUCKWHEAT.

Good to choice.....	nominal @ 1 75
---------------------	----------------

FLOUR.

Flour was advanced on Saturday last 20 cents all around, showing an opinion on the part of millers that higher prices for wheat have a reasonably permanent basis. California, Family Extras..... 4 20 @ 4 45
Bakers' Extras..... 4 10 @ 4 20
Oregon and Washington, Family..... @ 3 75
Bakers'..... 3 75 @ 4 00

FEEDSTUFFS.

Roller barley price was raised 50c this week.

Millers quote to wholesale dealers:	
Bran, 1/2 ton.....	20 50 @ 21 50
Middlings.....	24 00 @ 25 50
Shorts, California.....	21 50 @ 22 50
Barley, Rolled.....	26 00 @ 25 50
Cornmeal, coarse feed.....	31 00 @ 31 50
Cracked Corn.....	31 50 @ 32 00

HAY AND STRAW.

Keeps slowly but steadily climbing.	
Choice Wheat Hay.....	14 50 @ 15 00
Good Wheat Hay.....	13 50 @ 14 50
Other grades same.....	11 00 @ 13 00
Wheat and Oat.....	11 50 @ 14 00
Tame Oat.....	11 00 @ 13 00
Second Quality Oat.....	9 00 @ 11 00
Barley and Oat.....	8 00 @ 11 00
Alfalfa.....	9 00 @ 11 50
Straw, 1/2 bale.....	45 @ 65

BEANS.

The Eastern shipping demand is again reported active, the supply of damaged beans stopped temporarily and choice dry stock firm.

Prices to producers for choice round and carload lots on wharf, city:

Pea, 100 lbs.....	3 00 @ 3 25
Small White.....	3 15 @ 3 20
Lady Washington.....	2 75 @ 3 00
Pinks.....	2 40 @ 2 55
Bayos.....	2 80 @ 3 00
Red Kidney.....	4 00 @
Limas.....	4 25 @ 4 35
Black-eye Beans.....	3 85 @ 4 10
Garbanzos, large.....	2 40 @ 2 65

PEAS.

It is now admitted that most of the product in this line is out of the hands of producers. It is now a struggle between dealers, with large buyers for manufacture claiming that \$2.25 for Niles stock in this market is as high as Eastern market will permit them to go, and holders willing to let go at something like that rate.

For choice stock in city dealers are paying:
Green Peas, California..... 1 50 @ 1 75
Niles Peas..... 1 75 @ 2 25

SEEDS.

Parties here have received by mail offers of large lots of Utah seed during the past week, at 11c on the track there, equivalent to \$11.90 here.

For choice seed to producers, dealers quote:

Alfalfa, Cal.....	10 00 @ 11 00
Flax.....	2 @ 2 1/4
Timothy.....	4 1/4 @ 6

The following are selling at:

Canary, in original packages.....	4 1/2 @ 4 1/2
Rape.....	1 1/2 @ 2 1/2
Hemp.....	4 @ 4 1/2

POTATOES.

River Burbanks have been a little stronger during the week, especially the best grades.

Principal dealers for choice large lots on wharf, city, are paying:

Burbanks, Salinas, per cental.....	75 @ 1 17 1/2
River Burbanks, good to select, per cental.....	35 @ 50
River Reds, nominal.....	30 @ 40
Sweet Potatoes, per cental.....	1 10 @ 1 15
Oregon.....	95 @ 1 05

VEGETABLES.

Los Angeles peas and beans are considerably in evidence now, also egg plant, which competes with product in that line from Stockton. Fancy onions have been firm, and poorer stock offering plentifully. Large boxes of fancy tomatoes have gone as high as \$1.25 per box, but canners have been able as usual to get stock at 35c and less.

Rhubarb is in stock this week—the first of the season. Producers of green beans, especially wax and string beans, are enjoying higher prices.

Commission merchants report realizing for:

Beans, Lima, per lb.....	6 @ 7
Beans, String, per lb.....	5 @ 10
Beans, Wax.....	8 @ 10
Cabbage, choice garden, per 100 lbs.....	50 @ 75
Cucumbers, per large box.....	40 @ 1 00
Egg Plant, per large box.....	— @ 75
Garlic, per lb.....	2 @ —
Onions, per cental.....	30 @ 60
Okra, Green, per box.....	40 @ 60
Peas, Sweet garden, per lb.....	6 @ 7
Peppers, Chile, per box.....	60 @ 75
Peppers, Bell, per box.....	60 @ 75
Squash, Marrowfat, per ton.....	8 00 @ 10 00
Squash, Hubbard, per ton.....	12 00 @ 15 00
Yellow Pumpkins, Eastern, per ton.....	18 00 @ 20 00
Tomatoes, per large box.....	40 @ 1 25
Jerusalem artichokes, per lb.....	1 1/2 @ —
Rhubarb, per lb.....	4 @ 5

LIVE STOCK AND MEATS.

Hogs have declined a little under full receipts. The subject of prohibition by the labor unions in that trade of the receipt of country dressed hogs by city dealers is now under discussion.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, per lb.....	6 1/2 @ 7
Beef, cows.....	5 @ 6
Veal, large, per lb.....	7 @ 8
Veal, small, per lb.....	8 1/2 @ 9 1/2
Mutton—ewes, 7 @ 8c; wethers.....	7 1/2 @ 8 1/2
Lamb, per lb.....	9 @ 9 1/2
Hogs, dressed.....	8 1/2 @ 9 1/2

Dealers are quoting prices to producers for first quality live stock, less 50% shrinkage on cattle, delivered at city slaughter houses, as follows:

Cattle—Steers.....	8 1/2 @ 9
Cows and Heifers.....	7 @ 7 1/2
Thin Cows.....	4 @ 5
Calves, large.....	4 1/2 @ 5
Calves, light (gross weight).....	5 1/2 @ 6
Sheep—Ewes (gross weight).....	3 1/2 @ 3 3/4
Wethers.....	3 1/2 @ 4
Lambs, yearlings, per lb (live weight).....	4 @ 4 1/2
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	5 1/2 @ 6
Hogs, large, hard, over 250 lbs.....	6 @ 6 1/2
Hogs, feeders.....	5 1/2 @ —
Hogs, country dressed.....	7 1/2 @ 7 1/2

HIDES AND TALLOW.

There are no changes to record in prices previously given.

POULTRY.

Light receipts from the East and from California have combined to keep poultry at a good price and the market well cleaned up. Receipts of game, too, have been insufficient to supply the demand.

Small broilers should weigh from 1 1/2 to 2 lbs.; large broilers, 2 to 2 1/2 lbs.; fryers, 2 1/2 to 3 lbs. at the highest; all over that go as young roosters if they have no spurs and the breast bone is soft. Dealers quote prospective prices for:

Turkeys, alive, choice young.....	16 @ 19
Turkeys, alive, Hens, per lb.....	16 @ 19
Turkeys, alive, Gobblers, per lb.....	16 @ 19
Turkeys, dressed, Hens.....	19 @ 22
Turkeys, dressed, Gobblers.....	19 @ 23
Hens, California, per dozen.....	5 00 @ 6 00
Roosters, old.....	4 50 @ 5 50
Roosters, young (full-grown).....	5 00 @ 6 00
Fryers.....	5 00 @ 5 50
Broilers, large.....	4 00 @ 5 00
Broilers, small to medium.....	3 00 @ 4 00
Ducks, old, per dozen.....	3 00 @ 4 50
Ducks, young, per dozen.....	4 50 @ 5 50
Geese, per pair.....	1 50 @ 1 75
Goslings, per pair.....	1 50 @ 2 00
Pigeons, old, per dozen.....	1 25 @ 1 75
Pigeons, young.....	1 50 @ 2 50

BUTTER.

Quotations of prices have shown an unusual range the past few days, according to the character of the house making them, but stocks are not overly large and the market is steady at quotations, though some dealers urge that accumulating stock makes weak prospective market.

Commission merchants quote as returning for:

Creamery, extras, per lb.....	32 @ 34
Creamery, firsts.....	30 @ 31
Dairy, select.....	29 @ 30
Dairy, firsts.....	27 @ 28

Dairy seconds.....	24 @ 25
Parkin, good to choice.....	25 @ 27
Mixed store.....	18 @ 20
Pickled Roll.....	26 @ 28

EGGS.

Eggs in price have gotten about where they were before the late rains, and the market may be said to be weak, expectantly.

Commission merchants quote as returning for:

California, select, large, white and fresh.....	42 1/2 @ 45
California, select, irregular color & size.....	38 @ 40
California, good to choice store.....	25 @ 30
Eastern.....	27 @ 28

CHEESE.

Supply is light and prices firm.

Commission merchants quote as returning for:

California, fancy flat, new.....	15 @ 16
California, good to choice.....	14 @ 14 1/2
California, "Young Americas".....	15 @ —

HONEY AND BEESWAX.

Our country advices from the San Joaquin valley are: Prices for late shipments have been 5 @ 5 1/2 c per pound f. o. b., common points, for Eastern shipment; no comb honey to offer only for local trade in this part of the State; readily commanding 10c per pound, light amber, white not raised in this part.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.....	6 @ 6 1/2
Extracted, Light Amber.....	4 1/2 @ 5 1/2
Extracted, Amber.....	3 1/2 @ 4
White Comb, 1 lb frames.....	10 1/2 @ 11
Light Amber.....	9 @ 10
Dark Comb.....	5 @ 6 1/2
Beeswax, Good to choice, light, per lb.....	26 @ 27 1/2
Strictly fancy light.....	29 @ 30

HOPS.

Dealings in trade are not large. American brewers are still buying only as compelled to, hoping for a decline. It is pretty well agreed in the trade that there are in growers' hands on this coast not to exceed 45,000 bales.

Buyers are paying for:

Washington and Oregon.....	25 @ 26
Sacramento.....	23 @ 24
Russian River.....	24 1/2 @ 25
Sonoma.....	25 @ 26

WOOL.

Jobbing prices are:

Humboldt and Mendocino.....	12 @ 15
Mountain, free.....	10 @ 12
Plains, defective.....	7 @ 9

BAGS AND BAGGING.

Calcutta Grain Bags, buyer June-July.....	5 1/2 @ 5 1/2
Calcutta Grain Bags, spot.....	5 1/2 @ 6
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 5 1/2
San Quentin Bags, per 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	34 @ 35
Wool Sacks, 3 1/2 lbs.....	31 @ 32
Fleece Twine.....	7 1/2 @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three qualities.....	6, 6 1/2, 7
Fruit Sacks, Jute.....	6 @ 7 1/2

The Fruit Market.

FRESH FRUITS.

The superiority of Martinez grapes and the scarcity of cranberries of any kind have been notable features of the fresh fruit market. Grapes, persimmons, pomegranates, pears, raspberries and strawberries are most notable because of their absence. Large boxes of grapes are relatively more in evidence than crates. From most houses apples do not move readily and prices are lower.

Commission merchants are realizing for:

Apples, fancy, per 4-tier box.....	75 @ 1 25
Apples, good to choice, per 50-lb. box.....	50 @ 75
Apples, common to fair, per 50-lb. box.....	25 @ 50
Cranberries, Cape Cod, per barrel.....	— @ 12 00
Cranberries, Coos Bay, per 60-lb. box.....	2 25 @ 2 50
Raspberries, per chest.....	5 50 @ 7 00
Grapes, Cornichon, per crate.....	50 @ 75
Grapes, Isabella, per crate.....	75 @ 1 25
Grapes, Black, per crate.....	35 @ 75
Grapes, Muscat, per crate.....	65 @ 85
Grapes, Tokay, per crate.....	75 @ 1 00
Grapes, Verdelis, per crate.....	50 @ 65
Grapes, large boxes.....	1 00 @ 1 75
Pears, Winter Nellis.....	1 00 @ 1 25
Pears, other kinds, per box.....	40 @ 75
Persimmons, per box or crate.....	50 @ —
Pomegranates, per small box.....	50 @ 75
Quinces, per box.....	40 @ 60
Strawberries, Longworth, per chest.....	9 00 @ 11 00
Strawberries, Large, per chest.....	2 50 @ 4 00

DRIED FRUITS.

The marketing situation here has been showing the effects of the New York situation described in our last week's report, in the way of a sharp demand for smaller prunes and a good demand for dried product generally.

Jobbing quotations are:

EVAPORATED OR BLEACHED.	
Apples, 50-lb boxes, rings, pressed, fancy.....	6 1/2 @ 7
Apples, standard to choice.....	4 1/2 @ 6
Apricots, Moorpark.....	7 @ 10
Apricots, Royal, good to choice, per lb.....	5 1/2 @ 7
Apricots, Royal, fancy.....	7 1/2 @ 8
Figs, 10-lb. box.....	75 @ 1 15
Nectarines, per lb.....	4 1/2 @ 5 1/2

Peaches, unpeeled, choice.....	4 1/2 @ 5 1/2
Peaches, unpeeled, fancy.....	6 @ 7
Pears, halves, fancy.....	9 1/2 @ —
Pears, halves, choice.....	5 1/2 @ 6 1/2
Pears, halves, fair to good.....	4 1/2 @ —
Plums, Black, pitted.....	4 1/2 @ 5 1/2
Prunes, Silver, good to fancy.....	4 1/2 @ 7
Prunes, in bags, 4 sizes, 2 1/2 @ 2 1/2 c; 40-50s, 5 @ 5 1/2 c; 50-60s, 3 1/2 @ 3 1/2 c; 60-70s, 3 @ 3 1/2 c; 70-80s, 2 1/2 @ 2 1/2 c; 80-90s, 2 @ 2 1/2 c; 90-100s, 1 1/2 @ 1 1/2 c.	
Figs, White, in bulk.....	6 @ 6 1/2
Figs, Black, in sacks, per lb.....	4 1/2 @ 5 1/2
Plums, unpitted, per lb.....	1 1/2 @ 2 1/2

CITRUS FRUITS.

The market for citrus fruits has been dull, though good orange stock has at times moved well. With the exception of a few houses which have especial strength on that line of goods, oranges in this market are not now moving well—in fact, are not moving well on the whole. Seattle market reports a present preference for Japanese oranges, produced in the far away country, as they are fully ripe, which gives chilliness to the market here. This market is loaded with Seedlings and large-size Navels, but smaller sizes are most in favor.

Oranges, Navels, fancy, per box.....	2 50 @ 3 25
Oranges, Seedlings.....	1 25 @ 1 75
Oranges, standard.....	1 00 @ 1 25
Tangerines.....	1 25 @ 1 75
Jaffas.....	1 25 @ 1 75
Lemons—California, fancy, per box.....	2 00 @ 2 50
California, choice.....	1 25 @ 1 75
California, standard.....	1 00 @ 1 25
Limes, Mexican, per box.....	4 00 @ 4 50
Grape Fruit.....	1 00 @ 3 50

RAISINS.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902:

No. 2 crown Loose Muscatels, 50-lb boxes, 5 1/2 c per lb;	
No. 3 crown do, 5 1/2 c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanas, 5c; Seedless Thompsons, 5 1/2 c; No. 2 crown London Layers, 20-lb boxes, \$1.40 per box; No. 3 crown do, \$1.50; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.	

NUTS.

Walnuts are steadily climbing up.

Jobbing prices are:	
California Almonds, shelled.....	23 @ 26
California Almonds, paper shell, per lb.....	10 1/2 @ 11 1/2
California Almonds, soft shell.....	7 1/2 @ 9
California Almonds, hard shell.....	4 1/2 @ 5 1/2
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, hand-picked.....	6 @ 6 1/2
Walnuts, White, soft shell, per lb.....	11 1/2 @ 12
Walnuts, White, standard, per lb.....	10 1/2 @ 11

Produce Report.

Receipts of produce from California interior for week were:

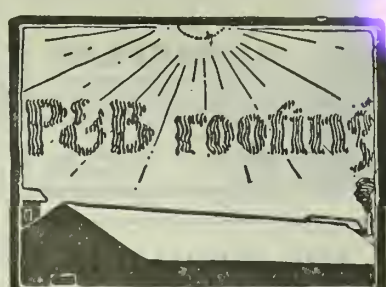
Wheat, centals.....	337,394
Flour, sacks.....	105,540
Barley, centals.....	52,115
Oats, centals.....	3,710
Potatoes, sacks.....	35,706
Hay, tons.....	2,470
Onions, sacks.....	2,278
Straw, tons.....	55
Wool, bales.....	352
Buckwheat, sacks.....	531

From Oregon:	
Oats.....	1,000
Flour.....	13,040
Potatoes.....	205
From Washington:	
Flour.....	33,050
Wheat.....	570
Oats.....	3,968
Potatoes.....	1,101
Hay, tons.....	19
Flaxseed.....	6,846

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING NOVEMBER 11, 1902.	
713,191.—MECHANICAL STOKER—C. R. Allen, S. F.	
713,048.—STEAM GENERATOR—G. W. Arper, Oakland, Cal.	
713,199.—HAND BUFFER—O. L. Brainard, Verdi, Nev.	
713,405.—STRETCHER—Mary W. M. Crawford, S. F.	
713,425.—SALTING MACHINE—J. W. Gheen, Astoria, Or.	
713,296.—STEAM GENERATOR—J. L. Giroux, Jerome, Ariz.	
713,201.—ROTARY ENGINE—J. C. Hagerty, Santa Cruz, Cal.	
713,302.—DUMP CAR LATCH—J. H. Hendy, S. F.	
713,099.—FEED REGULATOR—G. Hoepner, S. F.	
713,413.—ROTARY ENGINE—F. C. Jewell, Seattle, Wash.	
713,105.—GOLD SEPARATOR—F. M. Johnson, S. F.	
713,463.—GOVERNOR—J. A. Lightship, S. F.	
713,321.—ORE CAR—W. C. Matteson, Stockton, Cal.	
713,256.—BOTTLE—T. J. F. Muller, Portland, Or.	
713,484.—FRUIT ASSORTING TABLE—C. D. Nelson, San Dimas, Cal.	
713,331.—RAIL JOINT—O. Niehaus, West Berkeley, Cal.	
713,345.—HEAT REGULATOR—Geo. Porter, S. F.	
713,502.—ANIMAL TRAP—H. Sargent, Corvallis, Or.	
713,527.—RAILWAY SPIKE—H. J. Stone, S. F.	
713,364.—BUOY—W. L. Uhlenhart, Portland, Or.	
713,584.—BOTTLE—V. D. White, Cottage Grove, Or.	



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THE IRRIGATOR.

What the Department of Agriculture is Doing for Irrigation.

By PROF. ELWOOD MEAD, Chief of Irrigation Investigation, at the National Irrigation Congress.

The passage of the National Irrigation Act was one of the most significant events of the last session of Congress, and is destined to have a far-reaching influence in increasing population in the arid States and in shaping the laws and customs under which their people will live and work. It shares with the Panama Canal in public interest. The bureau which has its administration in charge has before it great responsibilities and great opportunities, and it is the duty of all friends of irrigation to contribute in every way possible to the success of its labors. This requires that there shall be moderation, patience and co-operation with those trusted with the work. The making of surveys and preparation of plans is a labor which requires time and ought not to be hurried. Harmony and public spirit are essential, and every one who has the best interests of the West at heart must seek to promote these. Speaking of the Department of Agriculture, I can say that this is the spirit and purpose with which its irrigation work is being prosecuted and will be carried on in the future.

WHAT IS STILL TO BE DONE.—Irrigation, however, is more than a matter of ditches and acres. The construction of irrigation works and overcoming material obstacles is only one feature of Western agriculture. After the channels are dug and the dams built, new and different issues have to be dealt with. The problems of the engineer are succeeded by those of the farmer. Irrigation is not unlike railroad building. The location of the railroad line, the fixing of grades, and the laying of the track, are only the beginning of a railroad. Much of its after success depends on the ability and judgment shown in these preliminary steps; but when the line is completed, the work of the engineer ceases and that of the passenger and traffic manager begins. The questions of rates, the questions of relation of the public welfare are then matters of vital interest, and their solution requires a different training and a different kind of ability from that which built the road.

So in irrigation. The value of the works constructed under the National Irrigation Act will, in the end, be measured by the success of the farmers who live under them, and the success of the farmers depends in a large measure upon the skill and economy with which water is used, and upon rights to water being established and protected. Just and effective water laws and proper officials to administer these laws are as much a part of an irrigation system as ditches and dams. The building of national irrigation works is destined to make this more apparent than it has been in the past, because when there is an abundance of water in the stream there is no need of public control; but when we seek to use not only the natural flow but to store the floods and to water farms stretching for hundreds of miles along rivers, and even across State boundaries, the distribution of the water supply, so that each one will be assured of his proper share, is a problem in administration as complex and important as that which confronts the managers of the great trunk railway lines. The value of the irrigated farm and the pleasure and profit of the farmer depend in large measure on men being able to till their fields without having to watch the stream to see

that some one does not steal their water supply. Stable water rights and proper protection are as essential to the success of irrigation as are stable railroad rates to the prosperity of the business world.

FUNDAMENTAL INVESTIGATIONS.—The Department of Agriculture is the branch of the Government created to promote the growth of rural populations and to foster conditions which will make farm life pleasant and prosperous. This department is, therefore, vitally concerned with irrigation, because it is the foundation of agriculture in nearly one-half of the country, and is the means by which a balance in population between the East and West can be brought about and the demands of our growing trade with the Orient fully supplied. There are several bureaus of the department which deal with questions relating to irrigation, and especially to the prosperity of the arid region in which valuable work is being done. But I wish to speak particularly of the irrigation investigations carried on by the Office of Experiment Stations, which deal with the agricultural and economic questions which must be solved in order to lay an enduring foundation for the future agricultural life of the arid West. This office supervises the expenditures of the fund provided for agricultural research in the different States, under which \$15,000 go annually to each agricultural experiment station in the arid region. It is also charged with the promotion of agricultural education throughout the Union. Its irrigation brings a closer association between what is being done by the State and what is being done by the Nation, and is an agency for securing harmony and co-operation in working out the perplexing questions which confront the State and Nation in the control and use of water supply.

Dr. A. C. True, the director of this office, has for many years been an active and earnest friend of irrigation development. He realizes that it is the foundation of Western agriculture, and has used his influence with the State boards of agriculture and trustees of agricultural colleges to give it the largest possible recognition in their work. Irrigation investigations carried on under this office help to broaden the work of the State stations and furnish information for Congress and the whole country regarding both the problems and possibilities of the arid West. It occupies, therefore, a distinct field. It is working to promote the success of the national works by helping farmers to use water with more skill and success. It is aiding the States in studying the causes which have made water-right litigation so costly and harassing and by the publication of reports is helping to bring about a better understanding of the issues involved and a more speedy and lasting settlement of the questions. In this work have been enlisted the irrigation experts of every one of the agricultural colleges of the West and the co-operation of the State engineers' offices. The experience and results of widely separated localities are being brought together, and irrigators of one section are being shown what has been learned elsewhere.

WATER RIGHTS AND LAWS.—The most valuable work of the office, however, is its studies of irrigation laws and institutions. The character of rights to water established by law will do more than all other influences combined to determine whether Western farmers are to be tenants or proprietors. Every acre of land irrigated ought to have a right to the water it requires. In this way the

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owner of every home will be secure and water monopolies be impossible. The disposal of the water resources of the West should be hedged about with every safeguard that wisdom or experience can suggest, and to do this there is need at the very outset of a full understanding of the existing situation. The first thing needed is the facts; the next is an enlightened public sentiment which will make the right use of them. We need to know what has been done by private enterprise in the past. We need to fully understand all the merits and defects of State irrigation codes. We need to know the extent of the water supply. This the Geological Survey is determining. Then we need to know what are the character of the rights to that supply, and this the Office of Experiment Stations is studying. Making these investigations under the national authority gives them an impartial character and shows to Congress and to the States the vital relation of State laws already enacted to the welfare of irrigators.

The wisdom of Congress in guaranteeing the protection of rights already established and making State laws governing the rights to water supreme, will, I believe, be vindicated by the future, because in a matter so vitally affecting the welfare of the home as the control of the water supply, changes in laws should come through the action and consent of those most concerned. The need, however, of a larger measure of public supervision over streams is becoming more and more manifest.

The great demand for water for irrigation purposes, the greater need of cities and towns for domestic uses, the importance of streams in the generation of power are making it absolutely necessary that some simple and final method of protecting rights to streams shall be provided. The Office of Experiment Stations is endeavoring to bring this about and with the most encouraging results. No feature of these investigations has met with more appreciative recognition than the study of water-right problems. The value of what has been done is not to be measured, however, by the results already achieved, because all educational influences must be slow in their operation. The real value of the work being done by the office can only be told by its future influence on the social and industrial life of the West.

AN ESSENTIAL PART OF THE DEPARTMENT WORK.—The irrigation work of the Department of Agriculture supplements its work along other lines in the arid region. It goes along with the Bureau of Plant Industry in its efforts to bring about a better management of the grazing areas; with the Bureaus of Chemistry and Soils in their studies of soils and water; and with the Weather Bureau in its measurement of rains and snows.

Nor is its irrigation work confined to the arid region. It is an essential part of the department's work in the humid East. It is showing that irrigation is a benefit rather than a drawback, and is helping the farmers of that section to make use of it. Nothing is more significant than the rapidly growing demand for information and advice about irrigation which is coming from Eastern farmers. Letters from every State in the Union not only

manifest an active desire to know more about irrigation in the arid West, but how it can be applied as an aid to production in the East. The answering of these inquiries and the furnishing of this advice is destined to be an important factor in promoting the success of agriculture throughout the country, and in strengthening the demand for land and water under the works which the Nation is to build.

WRITE ME.

If you are completely worn out, tired, sick, despondent, nervous and feel that life is a burden, I want you to write to me to-day. I know that I can improve your health and by doing so bring you happiness. I am the manufacturer of Baldwin's Allopathic Tablet Remedies which consist of thirty-five different cures in tablet form. From this list I can select a specific for almost any ailment you may have. I can send a remedy that will cure Neuralgia, Rheumatism, Cold, Headache, Piles, Kidney Trouble, etc. I have one remedy that will cure a multitude of ailments if they arise from a disordered digestion, such as chronic constipation, biliousness, headache, dizziness, etc. This remedy is known as Baldwin's Health Tablets. I want to become acquainted with you and show you that my remedies are just what I represent them to be. If you will send 25c. I will send you a bottle of Baldwin's Health Tablets, containing 50 doses, by mail prepaid. If they do not benefit you more than any other remedy you ever used I will refund the price paid. The purchase of one or more of these remedies entitles you to medical advice by our physician free of charge. I will also send you a sample of any of my remedies and a Medical Manual free.

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Hay in the State.

The San Francisco Hay Exchange has issued its regular annual statement of the stock of hay available for the San Francisco market on November 1, as follows.

Cities.	1901.	1902.
San Francisco.....	4,000	4,000
Belmont.....	250	.....
Redwood.....	2,000	1,000
Menlo Park.....	500	500
Mayfield.....	1,000	1,500
Mountain View.....	3,500	2,500
San Jose.....	.....	.....
Morgan Hill.....	400	500
San Martin.....	350	500
Hollister.....	17,500	14,000
Tres Pinos.....	5,700	5,000
Salinas, Gonzales, Chualar.	1,000	1,500
Mount Eden.....	900	200
Haywards.....	350	200
Decoto.....	750	700
Irvine.....	200	400
Warm Springs.....	500	500
Milpitas.....	1,000	700
Alviso.....	1,300	1,200
Sunol.....	600	500
Pleasanton.....	13,000	10,000
Livermore.....	19,000	15,000
Altamont.....	2,000	1,000
San Pablo.....	250	200
Pinole.....	2,500	1,500
Martinez.....	500	800
Pacheco.....	200	300
Concord and Bay Point...	3,400	3,200
Walnut Creek.....	600	800
Danville.....	2,500	2,000
San Ramon.....	3,000	2,000
McAvoy.....	2,000	1,500
Cornwall.....	300	300
Antioch.....	500	200
Byron.....	750	400
Bethany.....	2,000	1,000
Stockton.....	5,000	4,000
Vallejo.....	300	1,000
Benicia.....	1,900	1,000
Ulsun.....	1,100	1,500
Rio Vista.....	700	.....
Woodland.....	1,000	1,000
Marysville.....	.....	.....
Chico.....	1,200	2,000
Honcut.....	.....	.....
Reclamation.....	900	1,000
Lakeville.....	1,000	2,000
Petaluma.....	6,500	4,000
Napa Valley.....	2,000	2,000
Sonoma Valley.....	250	1,000
Walnut Grove, Courtland and Isleton.....	1,000	.....
Knights Landing.....	.....	.....
San Joaquin Valley.....	2,000	2,000
Total, tons.....	119,600	98,100

Stony Creek Forest Reserve.

The U. S. Geological Survey Corps, after a thorough examination of the Stony creek country—at the request of the Sacramento Valley Development Association—came to the conclusion that it was absolutely necessary to have a timber reservation on the headwaters of Stony creek and has recommended that the same shall be so reserved. In order to back up the recommendation with the voice of the people, blank petitions have been prepared and left at postoffices and other places for signatures.—Colusa Sun.

TWENTY-SEVEN tool companies have recently combined, and, according to the promoters, will control 95% of the production in the United States and Canada of axes, adzes, hatchets, hammers, picks, mattocks, scythes, sickles, hickory handles and similar products, and grindstone quarries, and will manufacture sufficient crucible and open-hearth steel for the needs of the various plants.

COYOTES ARE NUMEROUS.—The coyote is now a greater pest than ever on the plains. The men at the pumping stations of the pipe line near Summit lake recently trapped nineteen of them. Six coyotes in one bunch were seen over there on Tuesday of last week.—Hanford Journal.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

THE annual report of General A. W. Greely, Chief Signal Officer of the Army, says the corps has actually built and put in working order in Alaska 1121 miles of land lines and submarine cables within a period of twenty-four months.

RUPTURE CURED while you work. You pay \$4 when cured. No cure, no pay. ALEX. SPEIRS, Box 800, Westbrook, Maine.

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CHAS. C. PERKINS, Sacramento, Cal. Thoroughbred large English Berkshire swine, from imported and Eastern stock. Pigs for sale.

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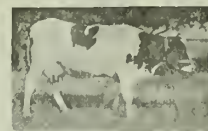
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Fidessa.....	570	4 yr.	25.	Aaggie Martin.....	416	6 yr.	16.12 oz.
Matty Clay's Aaggie 2d.....	499	7 "	23.15 oz.	Minnewawa Salambo, 3 teats	403	4 "	16.1 "
Ruda 2d Belle.....	401	7 "	20.9 "	Mountain Juliet.....	382	7 "	15.9 "
Minnewawa Lily.....	364	4 "	21.4 "	Lady Kurts Alpa.....	378	6 "	15.3 "
De Kol of Valley Mead.....	435	3 "	19.9 "	Corona Acturas.....	344	2 "	14.1 "
Wynetta Princess.....	391	2 "	18.7 "	Segriss Pietertje De Kol 2d.....	355	2 "	12.11 "
Minnewawa Louise.....	474	3 "	18.5 "	Western Princess.....	294	3 "	12.11 "
Drusa.....	399	5 "	18.4 "	Painted Lady.....	327	3 "	12.10 "
Wakalona.....	393	5 "	18.3 "	Mary Ann De Kol.....	391	3 "	12.10 "
Olympia Clay.....	526	6 "	18.2 "	Miranda Acturas.....	325	3 "	12.3 "
De Natsey Baker.....	377	2 "	17.7 "	Hengerveld Lass.....	306	2 "	12.2 "
Western Duchess.....	387	7 "	16.6 "	Wild West De Kol.....	279	2 "	10.19 "

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Danger in Mexican Oranges.

Referring to Mexican oranges, their importation into the United States and the danger of the Mexican maggot, with which they are infected, infecting our California orchards, a Mexican writer, in a communication in a recent issue of El Mundo, a daily paper of Mexico City, says: "It is from the State of Jalisco that the greater part of the fruit is exported, as the crop is better and more abundant there than in the other States. Some time ago several American newspapers published the statement that the Mexican orange was infected, and under no circumstances should it be exported to the United States, because the fruit threatened serious damage by contagion to the fruit of the United States. The matter was of great importance, and some commissioners came to our country, who, after carefully examining the oranges of many Mexican States, decided that there was no pest in the Mexican fruit, and that, consequently, there was no danger in exporting it."

"In addition, the commission upon agricultural parasites undertook a serious study of the matter, and its judgment conformed to that given by the early commissioners."

"Four days ago ten cars of the Mexican Central Railroad, loaded with oranges, left Guadalajara consigned to various fruit men of California, some of whom recently visited our country, and made large purchases of oranges. Further exportations will go out within a few days, and only await the arrival in the Republic of the refrigerator cars that have been ordered in the United States, in addition to those already here."

Commenting on this, the editor of the San Bernardino Times-Index says: "The exportations mentioned above are shipped from Mexico to points in Texas, where they are diverted and sent to the Eastern States. The California buyers referred to are commission merchants of San Francisco."

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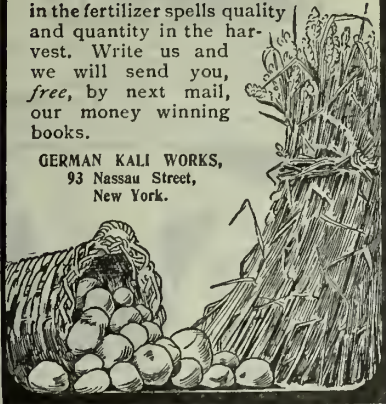
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Game as a State Asset.

The idea is being put out by one of the county game wardens of Washington State, Mr. Chambers, who was formerly State Game Warden of Wisconsin, that her game, properly preserved and conserved, is one of the greatest assets of Washington, as it proved to be in Wisconsin, which is much frequented by tourists who love to hunt and fish. The income from licenses to hunt in Wisconsin much more than meets the expenses of conservation of the game.

In a recent interview in the Seattle Times Mr. Chambers said, and what he said is quite as applicable to California: "I believe the game of Washington is worth more to us than our timber and mineral resources. When I aspired six or seven years ago to become game warden of the State of Wisconsin I advocated certain measures and stated that I believed Wisconsin's game to be its most valuable asset.

"Since then others have adopted the same ideas, and the game warden's office is one of the most important in the State. There is \$10,000 in the game warden's fund, and licenses last year amounted to \$60,000. So the game is protecting itself. Hundreds upon hundreds of tourist-hunters pour into that State annually, leaving thousands of dollars.

"Washington will in the future be the principal tourists' resort of the United States, owing to our scenery, game, delightful summers and mild winters.

"If we could enforce strict game laws we would have such game as would attract wealthy hunters and fishermen from every part of the United States. They would be willing to pay almost any license to hunt and fish here. Besides, we would have more game. The Wisconsin report shows there is more game there than for years, yet it has been hunted as it was never hunted before. But it is not hunted out of season. The greatest precautions are taken against pot hunters. In time Washington will take the steps to make this the greatest game State in the Union and money will pour in upon us in a perfect flood."

Pacific Rural Press Agents.

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With whom we have made arrangements for the accommodation of new subscribers to the PACIFIC RURAL PRESS.

It's All Right.

Hartford, Kan., Feb. 11, 1902.

Fleming Bros.: Enclosed find money for another bottle of your Poll Evil and Fistula Cure. It is all right. WM. MILLER.

CUCAMONGA DESERT AND GRAPES.—Riverside Press and Horticulturist: The Cucamonga "desert" has been found admirably adapted to the grape. The vines do not make so lusty a growth as in irrigated lands, but summer pruning can be dispensed with. No irrigation whatever is practiced, and the fruit is richer, bears a higher per cent of sugar than that of other parts of the country. There are upwards of 1000 acres in bearing vines now. Both table and wine grapes are shipped, and there are some beautiful vineyards of Sultana grapes which yield a great crop of raisins; besides there are 1200 acres of vineyard newly set out, mostly in wine grapes, and too young to bear, on the Stalder ranch, controlled by a Los Angeles company.

FINE CATTLE.—Santa Rosa Press-Democrat: Frank Mechem of Stony Point and Petaluma bought of Captain V. T. Hills of Delaware, Ohio, at his recent sale in Chicago, the following standard bred Red Polled cattle: Valeria, calved February 10, 1894, sire Hatch, and bull calf, price \$195; Lassie 3d, calved December 22, 1897, sire Lord Nork, and bull calf, price \$500; Treasure, sire Jupiter, price 200; Irma of Napoleon, sire William, price \$155; and the Red Poll bull, Eyke Dandy 6212, sire Dandy, price \$360.

A TELEPHONE "NEWSPAPER."—Tulare Register: The People's Telephone Co., which is now extending its lines in the country around Tulare, at certain hours each day will connect all the receivers on the different lines and send out to all with one telling whatever important news there is concerning any happening in the community or State—a fire, a notable death, the weather prediction or whatever it may be. [Such a service has been in vogue in Vienna, Austria, for some years.—ED.]

MONEY IN HOGS.—Visalia Delta: E. D. Halbert of the White river country sold eight swine to Ike Goldstein of Visalia for \$150.

Do the Right Thing when sore chest and tickling throat warn you that an all-winter cold threaten. Use the staunch old remedy, Perry Davis' Painkiller, and get rid of the pest in twenty-four hours. 25 and 50 cents.

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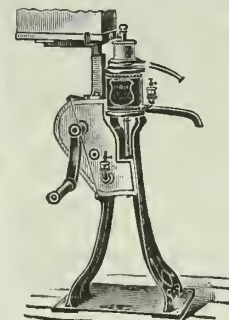
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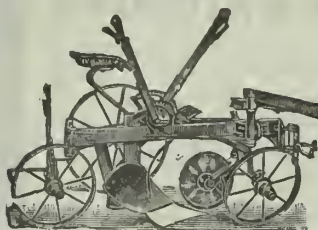


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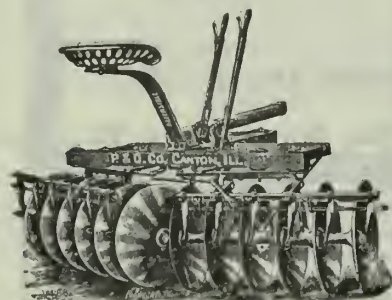
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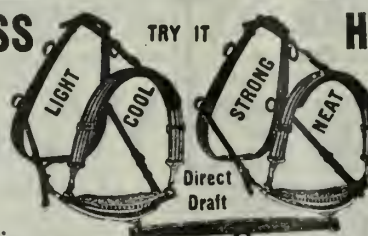
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The "OLDS" Gasoline Engine.
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 23.

SAN FRANCISCO, SATURDAY, DECEMBER 6, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Drying and Packing the Calimyrna Figs at Fresno.

We are glad to give our readers this week an exhibition of the commercial progress of the true Smyrna fig drying and packing at the establishment of Mr. George C. Roeding, whom our readers already know well from his enterprising undertakings with the fig. The pictures show so clearly the arrangements for drying and the busy scene in the packing house that they need no comment. There are, however, many interesting facts that one cannot learn from the pictures, to which words may be given.

Mr. Roeding's Calimyrna fig orchard contains sixty acres of about 4000 trees. With the exception of 200 trees, part of which are the Capri figs, and other varieties of the Smyrna figs, the orchard consists entirely of the Calimyrna variety. In addition to this, there are twenty acres of young trees, which were planted last year.

The first figs were produced on a commercial scale on the Fancher Creek Nurseries in the year 1900. The crop since then has increased yearly, and this season was something over forty tons. The crop would have been very much larger, but the cool weather in the early spring and summer months caused the Capri figs to develop slowly, therefore the insects were a little late in issuing. Had the season been an average one, the crop would not have been less than 100 tons. The quality of the fruit this season is far superior to that of last season, averaging larger in size, and the skins are quite tender, due to the improved method of handling. The method of harvesting is to pick up all the figs that have dropped to the ground first, and then to shake the trees, causing all the figs which are shriveled (but have not dropped off) to fall, when they are also picked up in buckets. Later on they are dumped into picking boxes and hauled to the drying grounds. On this drying ground there is a large shed, containing an open boiler, trays and boxes, necessary for the proper handling of the fruit. The figs before being placed on the trays are immersed in a boiling hot brine, made by dissolving

three ounces of salt to a gallon of water. The figs are placed in an open bucket, perforated with small holes, so that the brine will pass freely through the figs and give them a thorough cleansing and dipping. The object in doing this dipping is to remove the dirt, soften the skin, and it causes them to dry more rapidly than they ordinarily would without this treatment. The figs, after being placed on the trays, are turned over each day for a couple of days and then stacked, the drying from this time on proceeding in the shade. The length of time required for the drying depends on the weather, but two to four days is the limit under ordinary conditions.

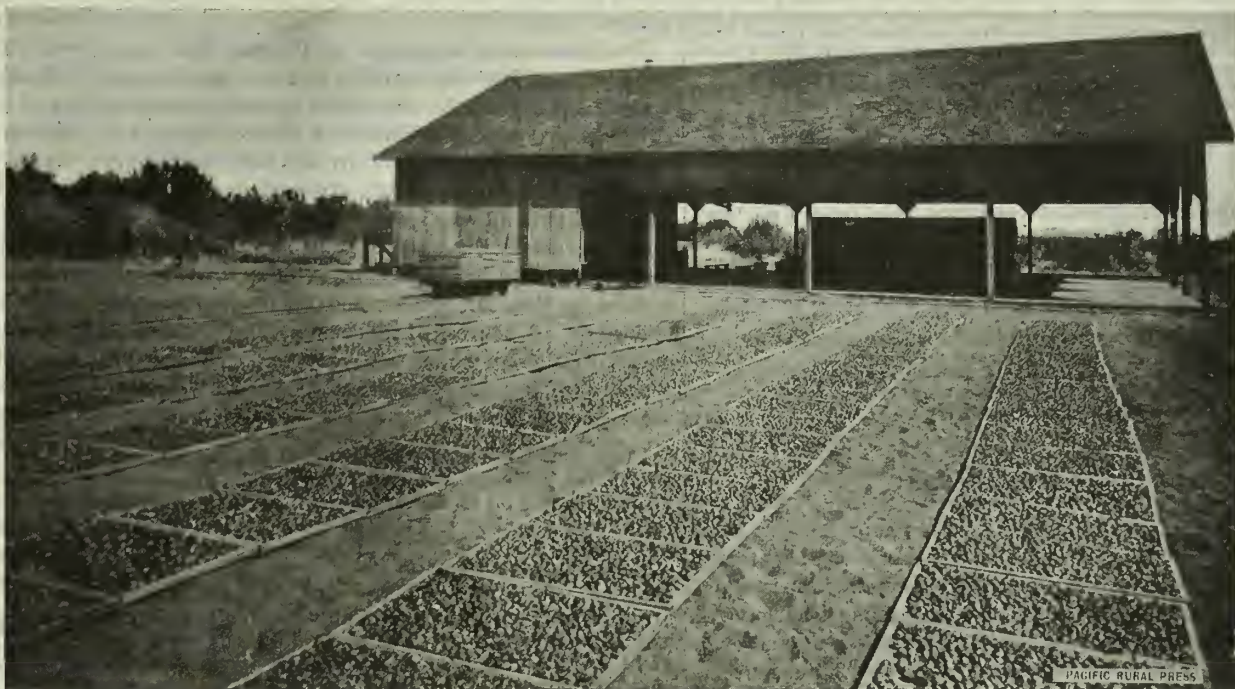
After the fruit is dried it is taken to the sweat room in the drying shed. This is a room built of tongued and grooved lumber, and is perfectly tight. The figs remain in this room from a week to ten days, being turned over every few days for the purpose of having them go through the sweat properly.

After the figs have passed this treatment they are washed in a cold brine to remove all dirt which may

have gathered on them while they were exposed on the trays, and at the same time all figs floating to the surface. These are figs which are overdried and are called floaters, and are taken out. The figs are then dumped into sweat boxes and hauled to Mr. Roeding's packing house in Fresno. Before packing, they are first run through the grader, which sorts them into four sizes. The small ones known as three-crown are not packed. Before packing, the figs are steamed for the purpose of killing any insect germs which may have gotten into them during the drying process, and also to soften the skins, so that they can be easily handled by the girls doing the packing. From the steam box they are taken to the tables, and then packed by the girls and women in one-pound and half-pound forms. Each brick, after it has been packed in the form, is taken out and weighed. The figs are then placed in the forms again, and are taken to the wrapping table. Each form holds either four one-pound or four half-pound bricks. The figs, after being wrapped, are passed

to the next woman, who places them in the paper cartons. They are then passed to another, who places the Calimyrna seals on the packages and packs them in the wooden boxes, in which they are finally shipped. The boxes hold twenty half-pound cartons and ten one-pound cartons. The one-pound cartons retail at present at 25 cents and the one-half pound at 15 cents. The whole business seems to be very carefully and systematically handled, and an injunction has recently been issued protecting Mr. Roeding against imitations of his trade-marked name "Calimyrna."

CALIFORNIA APPLES are said to be operating largely in eastern Washington. The local report is that "California dealers have come to that State to buy apples and the farmers are saving those on the trees. Agents of California buyers have inspected the quality of the fruit going to waste, and probably some of it will be shipped to the California market." Distant readers should know that this does not mean that California does not grow apples, but that California seems to have sold short to the distant market and needs more for home.



Drying Yard and Dipping Shed for Calimyrna Figs.



Packing the Calimyrna Figs at Mr. Roeding's Packing House in Fresno.

PACIFIC RURAL PRESS.

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Advertising rates made known on application.

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DEWEY PUBLISHING CO. Publishers

E. J. WICKSON. Horticultural Editor

San Francisco, December 6, 1902.

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The Week.

Clearing northerly winds have swept the sky in all parts of the State and brought low temperatures, which have not, however, dropped to injurious degrees in places where such would do most harm. All surplus surface moisture has been licked up and even the moister lands have come into plowing condition. A vast amount of field work is steadily going forward.

Speculative trade in wheat and barley proceeded on a lower level for a few days after our last report, but have improved again. Spot trade is rather unsettled by the variability in futures. Ocean freights are still very low and ships are abundant. Oats, corn and rye maintain an even course. Lima beans are a little off this week, and other beans unchanged. Hay is in moderate supply again for lack of cars and market is strong. Millstuffs are rather weaker. Fresh meats are unchanged. Butter has declined again and is rather weak with large supplies, while cheese is scarce and high. Eggs have declined considerably since our last and trade has been more active. Poultry has dropped from the high rates of Thanksgiving time. Potatoes are in excessive supply and weak and onions are firm. Fresh fruit is quiet and supplies restricted to staples. Dried fruits are firm and prunes have again improved and trade is active. Hops are various and quotations doubtful. Wool is firm for fine lots; defective wool is slow.

There seems to be a general feeling among the managers and others connected with the county displays of citrus fruits from northern California in the State ferry building that the show has been worth all that it has cost in practical and almost immediate returns. The only regret that we have heard expressed from such source is that the show was not held in Los Angeles, where no doubt the next one may be. Aside from citrus displays there have been some very interesting and instructive features connected with the exhibits, of which more will be said later. And in addition to the display of fruits there was on Tuesday evening of this week, from the band stand, in the midst of the displays, an intellectual presentation of the resources of San Joaquin by W. W. Middlecoff, Tulare county by Congressman-elect M. J. Daniels of Riverside county, Placer by E. W. Maslin, Kern by Ben. L. Brundage, Fresno by Dr. W. N. Sherman, which was listened to by a large crowd and did much good.

THE Eureka Standard says Judge Hunter, in the suit of W. G. Press vs. H. J. Mueller, decided that buying options on the future price of grain was gambling, and debts incurred for that purpose not collectable.

The Fruit Growers' Convention.

A Preliminary Glance at the Proceedings.

As the twenty-seventh annual convention of California fruit growers, in session this week in this city, is the most important agricultural event of the week, it is proper that we should give leading space to its details. At the same time it is our custom to present the topics brought to the attention of the convention with such fullness that all readers can assimilate them as they have leisure. The general glance at the salient points which we undertake now does not mean that fuller accounts will not appear later, for they will occupy many of our columns for several weeks.

The convention assembled in Pioneer Hall quite promptly on Tuesday morning and in numbers quite up to if not beyond the records of opening sessions of previous conventions. President Ellwood Cooper of the State Board of Horticulture was in his customary place, exhibiting a cordiality, strength and freshness which delights all who know his long service to the fruit interests. Professor Wickson was called to the vice-presidency by unanimous vote. Prayer was spoken by Rev. Dr. Adams and the convention was opened in an address of welcome by Mayor Schmitz of San Francisco, which was very well planned and timed and was appreciatively received. We take these paragraphs:

I feel proud to stand before you to-day as a product of this golden State, and I never felt prouder of a State than I do at the present time after coming back from a tour of the United States, and I want to say one word to you, ladies and gentlemen, of my observations in the East. I want to impress upon you that no product should be sent to our Eastern brothers and sisters labeled California fruits unless it is of the very best. I have seen all kinds of fruits and products called Californian, and I have seen the best labeled with a foreign label; I have seen oranges that I knew came from California, and after investigation found that they had come from California, that were labeled as coming from Florida, and walnuts as from Spain that grew in our own State. There should be something done to correct this abuse, and I believe that you, one and all, should work together on a co-operative plan. I want to impress upon you that there should be no little jealousy toward any part of the State, because I look upon California, not as having any north, south, east or west, but as being entirely California. And it matters not what part of the State a product comes from, each and every one of us should do what he can toward helping the State of California, and have no little petty grievances against any part of it. The citizens of San Francisco, being the largest city in California, are deeply interested in your work, and we hope, and we believe, that your deliberations during the days that you will be convened, will do much toward advancing the interest which you represent.

After a cordial vote of thanks had been tendered to Mayor Schmitz, President Cooper delivered his annual address, of which we hope to give a full account later. The following particular paragraphs will put the reader on the track of the speaker. After alluding fittingly to the continuous work of the State Board of Horticulture for the last two decades, Mr. Cooper sketched one phase of the commercial aspect of the fruit industry as follows:

I regret that I cannot make as favorable a report on the successful marketing of the fruit and fruit products as I did one year ago. The results have not been satisfactory to the growers. Losses have been sustained by the shippers of ripe deciduous fruits and also of lemons. The olive growers for various reasons have been sufferers financially, and it seems necessary and of vital importance that all fruit growers should have a better understanding of their business so as to avoid the waste of money and waste of energy. With the increased production, without an extended market, the outlook is certainly not hopeful. For seventeen years the subject of distribution has been discussed and various plans submitted, and while the great majority of growers have favored a united plan of action, nothing definite has been determined toward centralizing the whole business and thereby preventing losses to the growers.

In order to push further efforts toward ends seen to be desirable, President Cooper urged that the convention appoint a committee of five members to present to the next convention a plan of marketing to centralize all the fruit industries of California under one management; that there should be embodied in this plan the employment of paid agents on

salaries, having no other business interests except selling our fruits and fruit products.

President Cooper spoke forcibly of the need of pure food legislation and urged that our pure food law and amended olive oil law have the special attention of the Legislature; that some organized commission or one to be created be empowered and instructed to collect samples of foods and drugs on sale, have them analyzed and the venders prosecuted and fined if said foods and drugs are not labeled according to law; that an appropriation sufficient to commence this work be placed at the disposal of said body and that the amended olive oil act be amended by striking out Section 9 of said amended act. He also urged that there be enacted an inspection law to control the shipments of fruit and fruit products, exported, by having a proper label on every package indicating the quality or grade, and that the exporting of unsound fruits or fruit products and artificially colored olive pickles be prohibited. He held also that oils for table use or for medicine that are adulterated or any substitution, unless labeled according to the amended olive oil act, be prohibited from exportation.

President Cooper gave in detail his long experience with the grasshopper pest in its occasional appearance in California, and we shall give this subject in full at a later time. The address of the president was well received by the convention and referred to a special committee for recommendation.

President Benjamin Ide Wheeler of the University of California made a very spirited and cordial address, announcing the prospective creation of a separate department of horticulture in the University, which announcement was received with much interest by the convention. President Wheeler's address is outlined as follows:

I took so much of your time last year that I shall not take much if any this, but I can express to you my cordial feeling of desire to co-operate in what you are doing. I want you to feel that the University in every part of it has a profound interest in the development of these things which interest you. We have during the last few months been carefully considering the development of a department of horticulture, distinct from other departments, a department which shall be co-operative with and subsidiary to the department of agriculture, but which shall be distinct in the same sense that the department of botany has been differentiated out of the department of agriculture and created a distinct department. It seems to me there would be many advantages in this, as we should have a distinct body of workers with a distinct equipment, who could affiliate themselves with such work as you and the State Board of Horticulture are undertaking. There would be a handle sticking out of the University which you could take hold of, not that there would be necessarily many more men employed at first than now are, or that there would be from the internal side of the University at first a radical change in conditions, but from the outside there would be, as I say, a handle sticking out which could be definitely taken hold of, and it is always convenient to know where to take hold of anything. A great many people don't take hold at all because there are no apparent handles thereto.

The other thing I want to tell you is, I wish you would come over and see us. The miners came over and I know that most of them were surprised to find out that the University of California had grown into what it now is. I know that Californians generally do not know of their University as well as people who live outside of California. They are not aware that its standing in the general scheme of things is so high. I think I have a right to ask you, then, to acquaint yourself better with what is being done at Berkeley. The University of California is rated in the "Minerva," the year book of the universities of the world, as the fourteenth university in the world, and as the third in the United States. And here within these few years the pioneers of California and the fruit growers of California have built up an institution which ranks with the great institutions that the old cultures and the old civilizations have built up. I suppose it is true we have got to expect, as Professor Hilgard has put it, in that article of his in the North American Review, the greatest things in culture will always come where the rains do not descend with any degree of regularity. It is apparently the mission of those people who live in deserts and arid regions to lead the world because they have got to plan, and have to co-operate in order to adjust the supplies of water which may be found to their distributed needs. It is always best for people to have to put their thinking caps on—the best and greatest people are those that have to put them on. The man who has to bring water through ditches onto his land has to plan, and he has to stretch his hands to his neighbor. It is a poor life to lead of loneliness in California. There is nothing in this business of standing alone. I think it is time that Californians outgrew all notions of that sort, and it is

through organizations of this sort that the co-operative organization of men should join. If two men locked together are ten times as powerful as one man, when you get up to three men I don't know what the multiple is. Therefore, I am glad to meet you fruit growers of California because you stand for what you do, but most of all because you stand for joining hands and for co-operating in the work you have to do, and I want you to feel that this presence of mine here means nothing more or less than that the University of California wants its hands joined with the hands of all those who are willing to do something to move and make things go.

At the close of President Wheeler's address a vote of thanks was tendered and his invitation to visit the University formally accepted.

During the afternoon of the first day an excellent paper on apple growing was read by Mr. C. H. Rodgers of Watsonville and it will appear in our next issue. A paper by Mr. J. W. Mills of Pomona Experiment Station was heard with interest and will appear later. The paper which proved the most exciting of the session by plunging the convention into quite active discussion was that by Mr. H. P. Stabler of Yuba City on "The California Fruit Grower and the Labor Supply." Because of its wealth of interesting details we shall print it in full in a later issue, but the leading points because of their leading to sharp discussion may be summarized as follows:

The unprecedented scarcity of orchard help during the past season has been noted in every fruit district of the State. Advances of from 25% to 100% in price of labor have not been sufficient to secure help necessary to harvest the crops.

When fruit growing was begun as a California industry many Chinese were here and they were employed in the fields. Then the Exclusion law went into effect, and from emigration, death and other causes the Chinese became less numerous.

Hordes of Japanese next came, and, as like the Chinese, they boarded and lodged themselves, their employment in the orchards was widely advocated. The Chinaman had faults, but the Japanese were worse. There were undoubtedly many reliable Chinamen, but if there are any Japanese of that class Mr. Stabler wants the information telegraphed to him, collect. Chinese and Japanese are not ideal workers. They lack interest; they lack intelligence.

It is an axiom of industry that the best workers are born on the soil. The young men and women of California are the best assistants a fruit grower can find.

The white men who seek work in California orchards and vineyards may be divided into two classes—the genus "hobo" and the genus "homo." The hobo, as an orchard laborer, is impossible; the young man born on the ranch is ideal.

The native laborer is scarce, but the East has thousands of trained young farmers who are eager to come here if they are encouraged. There is also a great demand for the work of young women, and the immigration of families from the Eastern States is necessary.

The most prosperous fruit growers in California are men with industrious families, living on orchards of from ten to twenty acres.

A large proportion of California's successful fruit growers were boys who learned to work on Eastern farms. The young men from the East will make ideal citizens and help to build up the State, which the Chinese and the Japanese can not do.

Discussion was sharply pursued on the labor question on the basis of the foregoing coupled with a forcible speech made by Mr. A. N. Judd of Watsonville, who claimed that the necessities of the hour called for an ample supply of low priced labor, and Mr. Stabler's propositions would not supply it. "The Jap is no good on earth," said Mr. Judd, "but we need the Chinaman because he does work that white men will not do. He has degraded certain kinds of labor and nobody else will do it." Mr. Judd claimed that there was menial labor to which white people should not be assigned, but it is essential that it be done, and he believed the way to meet the need is to allow a certain amount of Chinese immigration for this specific purpose, just as arrangement has been made to let in a sufficient number to relieve the necessities of the sugar planters of Hawaii. He would have this properly safeguarded, and thought while matters are pending with China it could be done. The Chinese, he said, do not degrade white labor, but elevate it by freeing the white laborers from the lowest kinds of employment. He declared that the farmer who depends on white labor has to do the drudgery of the farm himself. The California growers, he said, must have a migratory class of labor that will go wherever the demand is most pressing. Mr. Judd then read a set of resolutions

adopted by the Pajaro valley apple growers declaring their need of help and favoring a greater supply of Chinese labor. With the great discrimination against California in the shape of freight rates to the Territories and the farther East at vastly more than the rates given shippers from Oregon and Washington, it seems essential that a supply of low priced labor be had.

Mr. Judd had his side of the question almost to himself. Several strong speakers rose to defend the dignity of labor and had their own way with the audience. One speaker had succeeded even with the genus hobo and believed he had lifted him to a certain extent, while others spoke strongly of success with girls and women and of how finely they worked when they were suitably provided for and supplied with decent accommodations. The convention manifested a decided preference for white labor and proposed to fight out the present difficulties on that basis.

The isthmian canal proved a warm subject although it was supposed at first that it might be easily passed. Mr. Edward Berwick believed that we should still call for the Nicaraguan route although the Government has gone via Panama. His committee introduced these resolutions:

Resolved, That this annual convention of California fruit growers, assembled this 2d day of December, 1902, in San Francisco, hereby records its satisfaction at the appropriation by Congress of the funds needful for the construction of an isthmian canal.

2. But, while we recognize that the construction of a canal at Panama will add greatly to the commercial facilities of the world at large, in which the people of this country will participate, we declare that it will be of no such advantage to those who will pay for its construction and contribute three-fourths of its business as a canal constructed by the Nicaragua route as last surveyed by the Isthmian Canal Commission.

3. We therefore submit that so important an enterprise ought certainly to be so carried out that the people who bear the cost should also be the principal beneficiaries, and we look to the Senate of the United States to take care that the isthmian canal shall even yet be built by the Nicaragua and not by the Panama route.

When these resolutions came up for action, they were opposed by half a dozen speakers, including Congressman-elect Daniels and President Cooper, on the ground that we need first of all a canal, and now that one seems about to be realized it is bad policy to raise an old issue between routes. Mr. Berwick contended that while there is any hope that the Nicaraguan route may be selected we should not cease to insist upon its manifest advantages. The party desiring to uphold the present policy of the Government, and to be content that a canal is to be had, triumphed, for a vote to strike out all but the first paragraph prevailed, and the simple declaration of satisfaction that an appropriation has been made for canal purposes was adopted.

Transportation problems naturally cropped out in the proceedings of the convention almost from the beginning, and still occupied nearly the whole time of the second day. The familiar facts about the unreasonable charges which have to be met by the California grower, when compared with the rates charged to shippers out of Washington and Oregon, were strongly presented by several speakers. The other unfortunate facts—that little or no progress has been made in securing regular schedule time for fruit shipments—were also forcibly presented. The growers seem to be, however, still disposed to waive the difference in rates, providing some guaranty in time of transit can be had. This disposition avails little or nothing, for fruit trains are still slowly dragged across the continent, sometimes at fair speed, sometimes three to six days or so late, so that no calculation can be had whether a car will arrive at a destination at a calculated date or whether it will arrive at the same time with others which started later and thus the market value of all be seriously reduced—sometimes much below the amount of the freight itself, not to speak of the fruit and its packages. These wide evils so often complained of still exist and it seems that practically no progress has been made in reducing them. Naturally this state of affairs is carrying our convention speakers more and more strongly each year to the Government ownership and operation of our overland railway as the only way in which existing evils can be corrected. This may seem to be a rather remote remedy, but none other is at all in sight. The essays by various speak-

ers emphasized and illustrated these propositions acceptably to the convention and we shall have some of them later.

The immediately practical side of the transportation question as affecting California fruit shipments was included in the report of Mr. R. D. Stephens, chairman of the committee on transportation. This committee had some time ago protested against the arrangement reported to be made for the next three years by the Southern Pacific and the Armour Car Co., and warned the railway that such an arrangement would give the Armour Company a monopoly of the California fruit business and seriously affect growers' interests. The statement was very strong and was commended to the convention for such action as it should see fit.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 1, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather during the week was clear and cool, with frequent frosts. Light rain fell in some sections. Frosts have not damaged citrus fruits, grain or feed. The soil is in excellent condition for winter seeding, and considerable progress in this work was made during the week. Prospects are good for a large acreage of grain. Early wheat and oats are making rapid growth and look very thrifty. Green feed is abundant and of excellent quality. Stock are in good condition and gaining. Orange picking and packing are progressing and large shipments are being made; the fruit is of excellent quality and large size. A good crop of olives has been gathered. Tree planting is progressing.

COAST AND BAY SECTIONS.

Cool, partly cloudy weather prevailed during the week, with light rain at the close. Frequent frosts occurred, but no reports of damage to crops have been received. The soil is in good condition for plowing and seeding and considerable progress was made during the week. In some of the northern districts early grain is thrifty and making good growth. Green feed is abundant and growing rapidly. Stock are in good condition. Citrus fruits have not been injured by frosts and are looking well.

SAN JOAQUIN VALLEY.

Partly cloudy and cool weather prevailed during the past week, with light rain Monday evening and foggy mornings during the latter portion. Heavy frosts occurred frequently, but caused no damage. Late grapes are still being shipped to the wineries. Orange picking and packing are progressing, and the fruit is reported of superior quality. Green feed is making good growth. Stock of all kinds are reported healthy and generally in good condition. The ground is in excellent condition, and plowing and seeding are progressing rapidly. Early sown grain is doing nicely.

SOUTHERN CALIFORNIA.

Clear weather prevailed most of the week, with cool nights. Frosts occurred in many places, but it is reported that they were too light to cause damage. Light showers fell in some sections. Plowing and seeding are in progress and a large acreage of grain has been sown in the vicinity of San Diego. Oranges are coloring, and picking is progressing in some sections. Large quantities of raisins were shipped from San Diego during the week. Carloads of new tomatoes are being shipped East from Anaheim.

EUREKA SUMMARY.—Grass continues making rapid growth. Plowing and seeding are progressing on the high lands, but the bottom lands are too wet.

LOS ANGELES SUMMARY.—Cool week with frosts; no damage reported. High desert wind on Saturday; not much damage. Orange picking for the holiday trade has begun. Farmers are busy seeding. Grass is growing nicely.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 3, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week...	Minimum Temperature for the Week...
Eureka.....	.89	13.73	11.98	10.92	58	38
Red Bluff.....	.01	10.03	9.03	5.72	64	36
Sacramento.....	.02	3.71	5.90	4.12	58	30
San Francisco.....	.01	3.69	5.44	6.11	58	46
Fresno.....	.00	2.66	2.11	5.03	60	34
Independence.....	.00	.79	1.35	1.38	58	26
San Luis Obispo.....	.00	3.78	4.44	3.56	64	34
Los Angeles.....	.00	2.45	2.46	2.72	72	38
San Diego.....	.00	2.49	.75	1.46	66	46
Yuma.....	.00	.71	.22	1.32	68	34

THE RANGE.

Summer Ranges of Western Nevada Sheep.

NUMBER V.

By P. BEVERIDGE KENNEDY and S. B. DOTEN in Bulletin 51 of the Nevada Agricultural Experiment Station at Reno.

The Waterleaf family (Hydrophyllaceæ) is a small family of plants of about 120 species, nearly all of which are natives of America. The leaves are usually abundant and contain an insipid, colorless juice.

TOMATO PLANT—WATERLEAF (*Hydrophyllum capitatum*, Dougl; var. *alpinum*, Watson) was the most highly prized forage plant collected during the summer. It was quite widely distributed throughout the ranges in the region of Webber lake, and al-

though known in botanical works as waterleaf, yet by the sheep herders it was generally known under the name of "tomato plant." The leaves are not too unlike those of the cultivated tomato for it to have received this name. According to the sheep herders it was the most nutritious and best-liked forage plant on the ranges, the sheep eating it greedily in preference to all other plants. Flanigan's boss herder, a Spaniard with fifteen years experience with sheep, told us that it is not injured in any way by the sheep, but grows abundantly year after year, in spite of continuous grazing. This is probably due to the fact that it has many thick roots branching from the base of the stem (as shown in the outline drawing), which must certainly hold it firmly in the soil, and enable it also to withstand long periods of dry weather. The leaves are juicy and refreshing, with somewhat the flavor of young corn stems, but not so sweet. It was found growing at Webber lake in the driest soil on the hillsides where there was little or no timber, and commonly associated with the sunflower, as shown in the engraving. If the production of this plant could be doubled each year it would soon increase the capacity of the range for forage a hundred fold. It does not flower profusely in nature, and as the flowers are eaten off every year with the leaves, it is not possible for it to increase by the distribution of its seeds. What can be done in this direction under cultivation we do not know, but experi-

ments will be conducted with it as soon as the opportunity offers itself.

The outline illustration will show what remains of a tomato plant after a hungry sheep has visited it.

PHACELIAS—(*Phacelia memorialis*; *P. circinata* and *P. procera*.)—The plants were noticed frequently in the mountains from Lincoln valley to Talbot's home camp. They do not grow in patches, but scattered individuals could be found everywhere. In general appearance they resemble the tomato plant, but have fewer and less succulent leaves. The sheep herders considered them valuable for feed, and it was also noticed by the writers that they were eaten to a considerable extent.

THE STABLE.

Draft Horses and Their Feet.

TO THE EDITOR:—My attention was called, not long since, to an article taken from the Montreal Herald and Star, entitled "Feet of Horses Should be Sound," which I hope you will republish, as follows:

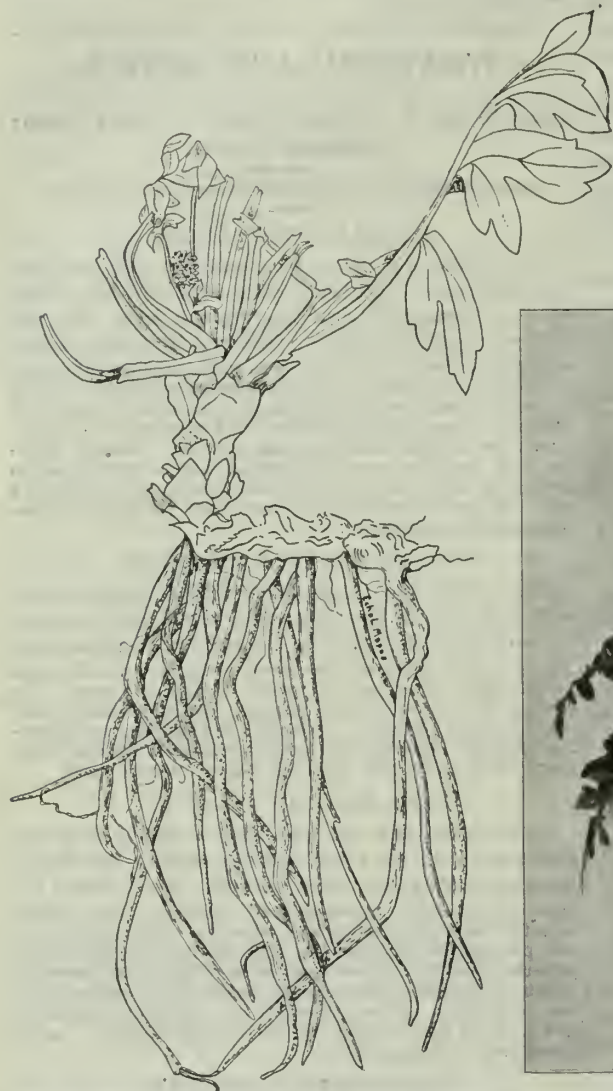
"The shape and nature of a horse's feet depend primarily upon three points, which are as follows: First, on heredity and on the breeding of a colt; second, on the influences of soil and climate which these exert on the development of the foot; third, on the care with which the feet are attended to during the growth of the foot from foalhood to maturity.

"In regard to the first point, it is well known that in breeding horses stress should be laid on having sound, well-shaped feet in both mares and stallions, so as to insure this desirable quality in their progeny. Poorly shaped, weak and flat feet in the parents, or in one of them, are readily transmitted to the offspring in the same way as any other bad quality may be transmitted. Though poor feet are found in any breed of horses, yet they are more frequent in certain breeds than in others, this being due largely to the nature of soil and climatic influences under which different breeds of horses are reared.

"As far as concerns the second point, it may be broadly stated that dry, high-lying soil and a comparatively dry climate favor the production of horses with strong, tough, sound and well-proportioned and small rather than big feet, while horses bred on low-lying, marshy land and in a damp climate have soft, spreading and oftentimes flat feet of an inferior quality as far as regards ability to stand work.

"Apart from the more general question of different countries or different districts in one country, the question of the nature of the soil influences the quality and development of the hoof in one and the same locality, according to whether a horse has been reared on low-lying, damp pastures or on higher lying and drier land. Dampness is always associated with the production of soft horn, and dryness with that of harder and sounder horn. The nature of the soil has also a further effect on the feet of horses in that on soft or spongy pastures the wear of the horn is not equal to the rate of its growth, which results in the hoof becoming overgrown and misshapen unless attended to. When young horses are reared on dry pastures, where the soil is fairly hard, on the other hand, a considerable wear of the horn of the hoof takes place, which serves to balance the growth and preserves a proper shape of the foot and a correct proportion between its various parts.

"Regarding the third point, a careful breeder should in all cases pay attention to the feet of his foals and young horses and have them attended to and trimmed when necessary. The degree of attention this point requires varies greatly, according to circumstances. The more unfavorable natural conditions are to the production of a sound and well-formed hoof the greater must be the care bestowed upon the feet, as will have been gathered from the foregoing remarks. Apart from natural influences which affect the development and growth of the hoofs of all foals and young horses in the same manner, the feet of some colts are much more disposed to become overgrown at certain parts, and consequently misformed, than is the case with others, even when they are reared under exactly similar conditions. It must, however, be understood that even the greatest care of the growing feet cannot actually modify the quality and the



Tomato Plant, Showing Strong Roots and What Remains of the Plant After the Sheep Have Grazed Upon It.



Tomato Plant. (*Hydrophyllum capitatum*, var. *alpinum*)



Tomato Plants and Sunflowers, Two Tomato Plants in the Foreground.

strength of the horn, but that only the shape of the hoof can be controlled thereby to a certain extent.

"The evils of misformed or overgrown hoofs in growing horses are not confined merely to the feet, but often also affect the limbs, causing these to assume abnormal positions, such as turned-in or turned-out toes, and influencing the slope of the pastern. Hence it is necessary to see that no part of the wall of the hoof becomes overgrown owing to want of wear balancing the growth of horn and to pare the wall or crust in such a manner that a level and even-bearing surface and a correct proportion between the toe and the heels of the foot are obtained. The proper development of the frog—which is so essential an organ in the horse's foot—must also be encouraged by insuring that it takes a proper bearing on the ground and receives its due amount of pressure as a consequence and by refraining from touching it in any way with the drawing knife when in a healthy state. Further, the feet should be examined occasionally to see if thrush is developing, and if this is the case the frog must be immediately treated for the complaint. Though the presence of thrush may not be attended by any visible inconvenience, and on this account is usually neglected, it inevitably leads to a shrinkage of the frog and frequently to a contraction of the heels.

"It is difficult to say how far feeding affects the growth or the quality of the horn of the hoof, though it cannot be denied that this question also has a bearing on the subject under discussion to a certain extent. When keeping colts in straw yards or housing them in sheds or loose boxes, dry bedding must always be provided. Dirty litter, soaked with urine and rainwater, has—like damp pasture—a softening action on the horn, this deleterious influence being greatly increased owing to the presence of ammonia generated from the urine.

"Once the horse has attained the age at which he is put to work, the chief factor in regard to his feet is a correct mode of shoeing. Though damp still has a softening effect on the horn of mature horses, and feet may be and often are spoiled by bad shoeing, yet the question whether a horse has sound and strong or weak and misshapen feet depends primarily upon the factors discussed above."

MR. SKILLMAN'S COMMENTS ON THE FOREGOING.

Since there is a revival of interest in the breeding of draft horses (more notably so in the Eastern States, but the infection will soon reach our coast), I trust you will allow space in your most valuable paper for a few words upon this vital topic.

Of all the points to be considered in passing upon the merits of a horse, soundness of feet, in my opinion, comes the very first. Size, good bone, powerful muscle, symmetry, fine style and action, fashionable color and glossy coat—what do they avail unless built up from a foundation of four sound, shapely, well-proportioned feet? A horse that is not put up in this way will suffer the fate of the proverbial house that was built upon the sand. Not that the storms will wash him away, but the soft, spongy walls of his great flat foot coming in contact with the wet earth will gradually spring and yield, bringing too much weight upon the frog and causing it to bear unevenly upon the ground. The result is an equine wreck, for he can no longer be depended upon as a nicely balanced machine for the drawing of heavy loads over rough city pavements.

A good foot is small rather than large—though not too small—with a properly developed frog, having an even bearing on the ground, the whole sustained and held firmly in shape by a high, thick wall of tough, unyielding horn.

The amount of care and attention given the foal, the character and condition of the soil where he has pastured, as well as the climatic changes to which he has been subjected, have doubtless been potent factors in the development of his feet.

It is beyond question that excellence in this particular is characteristic of the various breeds to a greater or less degree. After years of experience as an importer, it is my unqualified verdict that no other draft breed can compare with the Norman or Percheron in point of good, sound, enduring feet.

No other government on the face of the earth has fostered the propagation of good horseflesh as France has done. Every stallion must be inspected and approved by government officials before he can be entered for service, and in this way defective ones are prevented from reproducing their defects and officially stamped out. In support of the theory that colts pastured on high-lying, dry land will grow up with better feet than where reverse conditions exist, I found the horses of Normandy with better feet than those raised down in La Perche, near Nogent le Rotrou. The feet of the Normandy horses are equal to iron—seemingly indestructible—but those of the latter district are still far superior to those of any other draft breed I know of.

It is proudly claimed by some admirers of the Percheron horse that he is descended from Arabian ancestry. If not directly so, he is sufficiently impregnated with the blood of that noble race to inherit many of its good qualities, foremost of which is the tough, enduring feet for which it is justly famed.

I visited the Shire horse in Essex, and was favorably impressed with his many claims to superiority; in fact, he is a model draft horse with one exception,

His breeder or owner will consume much valuable time coaxing the hair to grow long over his fetlocks, making him look like a Brahma rooster, because American importers fancy it, he says, and while I saw some with the best of feet, many were deficient in this respect.

I have found the Suffolk Punch an all around good draft breed, but, not having received the same care in the transmission of defective feet as the French draft breeds, their feet, while generally good, are not up to the standard of the latter. So far as my observation has extended, the big, bulky Clydesdales are uniformly faulty regarding feet, and to some people no feet means no horse.

To me it seems passing strange that a practical man of affairs—a San Francisco drayman, for instance—should first ask as to the weight of a horse offered him for sale. Superfluous fat may increase the weight to 1800 pounds without enhancing his propelling power one iota, while a set of flat, spongy feet will in a year's time render him worse than useless. Yet the question of weight remains the paramount question. Perhaps the horseman of the future will awaken to the value of sound feet in the horse he breeds.

THEODORE SKILLMAN.

El Verano.

THE POULTRY YARD.

Leg Weakness, Etc.

TO THE EDITOR:—Will you kindly oblige an old subscriber to the PACIFIC RURAL PRESS by telling what to do for chickens that are apparently troubled with leg weakness. The brood has been exceedingly well and healthy until three or four days ago. Two act as if they are crazy and can not pick up food. The slightest noise makes them wild. Another sits down like a dog. Another lies over on its side. In some instances their feet are drawn. So far as I can see, there is no cause for these afflictions.

In your issue of October 25 there was a piece on "The Fowl Tick." You spoke of using oil in a preparation to kill them, but did not give the name. Will you kindly give name of oil? Do you think that Carbolineum avenarius will permanently eradicate the fowl tick? It is a preparation guaranteed to eradicate all vermin. Fresno. MRS. J. D. MUSICK.

TO THE EDITOR:—The writer does not say how old her chickens afflicted with leg weakness are, nor if they are in the brooder or with the hen. If the description had been a little more explicit, the right remedy might the more easily be designated.

Brooder chicks are sometimes troubled with leg weakness because of too much bottom heat. This is often fatal—excessive heat under the little birds. It will cause annoying and fatal bowel troubles if allowed to run any length of time. Top heat and bottom heat, well equalized, must be obtained in the brooder to make it a success, together with excellent ventilation.

If the chicks are not very young, the method of feeding may have had something to do with their trouble. Proper feeding may bring things around all right. It will be well to give some tonic in the food. Sulphate of iron is often used for young and old fowls. The writer has for some time used, and thinks highly of the practice, chrome iron—the common Venetian red to be procured at all paint shops or at the hardware stores. This is given to young and old fowls with the best results. It is sometimes well worth knowing.

If these fowls are several months old, or older, the following extract from a poultry book may be applicable: "Leg weakness is generally due to the body increasing in weight out of proportion to the strength of the legs. This is the usual cause; but any disease that weakens the chick may cause it. The disease usually attacks the chick between four and six months of age. The first symptoms are a trembling of the legs and a disposition to rest on the hocks. If the bird is vigorous it will outgrow the trouble, but any treatment to be beneficial must be resorted to on the appearance of the first symptoms. For food give bran, wheat and oatmeal; instead of water, give skim milk. Cook the oatmeal and, when cool, add thirty drops of diluted phosphoric acid for each bird affected and give twice daily. Be careful not to confound leg weakness with rheumatism. In the latter disease there is always swelling of the joints.

For the ticks, there are several excellent lice powders and liquids on the market that are cheap and efficient.

A. WARREN ROBINSON.

FRUIT MARKETING.

Outputs From Farm, Cannery and Drier.

The following items gathered from exchanges in the course of a hunt for reading matter of a different nature are, perhaps, as good evidence as any to our Eastern visitors, this winter, that the wonderful yields they hear of as occurring in this State are by no means fictitious as a whole or rule, but are merely the natural results of a climate different from the one they are accustomed to, and other perfectly natural, but unusual advantages coupled with intelli-

gent cultivation. The success evidenced by these haphazardly gathered items is as varied as the local conditions of soil and climate and degree of perfection in cultivation, but from them a reasonable opinion of what average people in average circumstances in all ways here can do may be deduced.

The Times of Sebastopol says that Wm. Heitstuman, one of the most intelligent of the operators of driers in the State, put out this season seventy tons of apples, thirty-five tons of prunes and thirty tons of peaches, the prunes and peaches sun dried and the apples evaporated.

The Daily Register of Napa says that this season's output of dried prunes from Napa valley will be a record breaker, greater quantities having been packed and sent out to consumers this fall than ever before in the history of the business here. And the prices throughout have been good too, better than the average. A carload a day is shipped by the Napa Fruit Co. from their drier. This busy state of affairs has been in progress for almost two months past and will not cease until the middle of December. Owing to the possession of an evaporator the company avoided much loss to prunes from the rains.

The Enterprise of Porterville says that C. W. Buswell completed shipping his lemons from his 17-acre 9-year-old orchard November 15. He had 3490 packed boxes or over eleven cars, of which nine averaged 300 sizes. As Mr. Buswell picks several times during the year this showing is a fine one. While the Messenger of the same place says: It is reported that Pete Carney, a well-known orchardist, will realize, clear of all expenses, the neat little sum of \$8000 from his ten-acre orange orchard this season. His orchard is but nine years old.

The following telegram is self explanatory: NEW YORK, Nov. 20.—Messrs. P. Ruhlman & Co. of this city sold yesterday a car of Old Mission brand of Valencia Late oranges (raised by C. C. Chapman of Placentia, southern California), containing 71 boxes of fancy and 291 boxes of choice, 362 boxes in all, for the handsome sum of \$3124.38. The fancy averaged \$10.87 and the choice \$8.07 per box. This is remarkable, indeed the most remarkable sale ever held, beating all former straight carload sales by \$562.

Returning to that part of the State north of Tehachapi pass, the Star of St. Helena, Napa county, says that "as an example of what vineyardists have done this year, the following may be given: Two men purchased a place up the valley a little more than a year ago. The price of the property was \$5000. They paid \$1000 down, giving a mortgage for the balance. On the place were fifteen acres of vineyard in good condition. They have just received as payment for this year's crop \$4300." Which is \$286 an acre; not phenomenal at all. A phenomenal but true profit was that to John Dutton of Lodi, this year, of over \$1400 from two acres of grapes.

The Sentinel of Hanford says that "C. V. Parker from his 10-acre vineyard picked 10,000 trays of grapes, which will weigh between twenty-five and thirty tons. This is a pretty good showing for a little vineyard, but the best part of it is that the raisins were sold for 4½ cents in the sweat box," which is \$225 per acre on twenty-five tons only.

The Register of Tulare wisely says: "Grapes do not always bear as heavily as they have borne this year, but a grape crop of some sort is a sure thing, for if the frost cuts off the first crop, as it does sometimes, the second crop comes right along, and the grower has a crop anyhow."

The Concord Transcript says: "Geo. A. Putman picked six tons of Mission grapes of a fine quality from 300 vines, which have borne every year since 1866." Speaking of shipments from the one station of Concord it further says: "The Mount Diablo Wine Co., through its representative, Ira B. Kilgore, has shipped sixty-six carloads, or over 3,037,076 pounds net weight of grapes, for which the Mount Diablo Wine Co. paid over \$30,000, prices ranging from \$20 to \$25 per ton. Exclusive of the grapes shipped from Concord by the Mount Diablo Wine Co., are many shipments of other companies, also the large quantities crushed by the various wineries of this section. The Mount Diablo winery at Clayton crushed over 800 tons. The winery of Paul De Martini crushed nearly 500 tons, and the winery of P. Crena at Concord crushed upwards of 300 tons. Outside of this is the Terry winery at Clayton and several smaller wineries, from which figures were not obtainable. The above does not include the 500 or more acres of grapes which are west of Walnut Creek, nor the hundreds of acres between Pacheco and Martinez, about all of which were hauled to Martinez for shipment. The facilities for shipping at Concord are in such excellent condition that in another year all grapes grown west of Walnut Creek will be shipped from Concord. The first car shipped by the Mount Diablo Wine Co. was on September 24 and the last car on November 12. The largest shipment for one day was on October 10, when four carloads were dispatched. The figures given here are for wine grapes only, and does not include the tons of table grapes which are packed in crates right in the vineyard and shipped from Concord to all parts of the East. It will be interesting to many to know that the grapes grown in Contra Costa are superior to any grape in the State for the manufacture of high priced dry wines and many, many hundred tons were shipped to Napa for that purpose, and will bear

the label of the Napa valley wine. Also that more grapes have been shipped from Concord this season than from any other single shipping point in the State. The average yield per acre is ten tons, and all the grapes shipped from Concord were raised in the vicinity. For productiveness Contra Costa county is not excelled by any county in the State."

The Campbell Visitor says of Santa Clara county that "the wine output can as yet only be approximately estimated, but it is known to be greatly in excess of last year. The output of the California Wine Association will, it is thought, reach nearly a million gallons. John Corrotto of the Fifth Street Winery will have 100,000 gallons on hand this season. The Del Pash Winery at Los Gatos will probably have 150,000 gallons for sale, while M. J. Pasetta & Co. of San Jose will store for spring sale 50,000 gallons. The Los Gatos Co-operative Wine Association will also store for winter many large casks of port and angelica wines."

The Daily Index of Salinas says that "James and Henry Bardin, who live at Blanco, about 4 miles from Salinas, last year raised over 30,000 sacks of first-class Burbank potatoes. This year the land on which the potatoes grew—700 acres—was planted to sugar beets, yielding 12,500 tons, for which they received, delivered at the Spreckels factory, \$4.50 a ton, or a total of \$56,250. The expense account is about as follows: Labor, \$10,000; freight, \$5000; other expenses (estimated) \$10,000, making a total of \$25,000, which leaves a net profit of \$31,250."

It is hardly time yet to give an accounting of the sugar beet output of the State for this year, but this is a sample.

In outputs by driers and canneries the following may be instanced as giving an idea of various noteworthy sections:

The Chico Record says that the output of Reynolds & Son, packers of dried fruits at that place this year, will be 100 carloads, and this is but one such firm at that point, the Chico Fruit Co. having a larger plant, but this year putting out perhaps less fruit on account of a recent fire which affected their facilities. Unfortunately for the reputation of Chico abroad much of the fruit packed by the first named firm was sold to a San Jose firm, and went out of the State under the Santa Clara county label.

The Santa Rosa plant of the California Fruit Canners' Association began the season's canning June 20, and closed about two weeks ago, packing in that time over 80,000 cases of fruit. Of freestone peaches 13,340 cases were packed, clings 17,460 cases, pears 1885 cases, and cherries 10,039 cases. In addition to those fruits the plant handled a great quantity of plums, blackberries (15,217 cases), raspberries, apples and string beans. Owing partly to the scarcity of labor in that vicinity much fruit offered the cannery was unable to handle, and the output does not begin to approximate its capacity.

The output of the Stockton plant of the C. F. C. Association was not as large as expected, owing to the vegetable ripening so quickly that they could not be handled. Only about 80,000 cases, or 2,000,000 cans, were put up. Between 400 and 500 tons of apricots and about 200 tons of peaches and pears constituted part of the stock worked up. The fruit was purchased mainly in the vicinity of Lodi, Acampo, Merced and the southern part of Sacramento county, though some of it was obtained from the southern part of the valley. Of the establishment's products between 20,000 and 25,000 cases will be sent to England.

At Newcastle, in the Placer county famous fruit shipping region—one of the most notable in the State—the Newcastle News says the George D. Kellogg Packing Co. canned ten cars of choice fruit during the season, and the cannery put about \$17,000 in circulation in Newcastle. The last run was on tomatoes, of which a carload was put up. Some of the output

of this cannery, which is very choice, was put on exhibition at the recent citrus fair in the State Ferry building, San Francisco.

New canneries are projected at Yuba City, Lodi and Santa Rosa, all to be "independent," with an enlargement of the Association cannery at the last-named place; and Petaluma expects to have a beet sugar factory.

The Oroville Mercury of a late date says: "The Ehmann Olive Co. has a new oil press that is the largest in this State and, consequently, in America. It has a capacity of five tons daily and is operated entirely by mechanical means. The bed of the press is arranged to slide and holds two vats; while one is in press the other may be filled with pomace and the operation is practically continuous. The olive picking establishments of Butte county will work full time this year."

The Redlands Citrograph shows the practical value of California resources, natural and created, in another way. It says, in the latest number: "As some evidence of the rental value of our rich valley lands when used for market gardening purposes, we may mention the lease by R. L. Garner of San Bernardino to Mow Sung & Co. of five acres at a rental of \$700 per year. A rental value of \$140 per acre would make the ordinary Eastern farmer look wild, but here as fast as one crop is taken off another goes in."

To change the subject a little, the Dixon Trihune says: "At the annual meeting of the stockholders of Dixon Creamery, 100 of the 170 shares in force were represented, and J. H. Rice, J. R. Bloom, J. A. Kerr, J. H. Peterson and James Millar were elected directors for the ensuing year. F. A. Hutton was re-elected secretary. The secretary's annual report showed the year's disbursements to patrons to be over \$11,000, the product having been sold in San Francisco and Sacramento. Although the creamery has been obliged to make a number of improvements during the past year and install some expensive machinery, the expenses have been met, and the institution was found to be operating on a basis altogether flattering to the management. Assessment No. 6, recently levied, has been rescinded, and the board of directors assure the stockholders that assessments have ceased."

A Woodland Democrat correspondent says: "Of the almond crop around Davisville 310 tons of whole nuts have been shipped, leaving about 30 tons of meat to follow. The whole aggregates the nice little sum of between \$85,000 and \$90,000. For the present season the fruit crop will, perhaps, foot up not far from \$200,000, gathered from less than 2500 acres. The above estimate does not include the nursery stock sold or the apricot kernels and miscellaneous fruits, and will swell this amount by at least \$50,000."

Over 100 cases of dressed turkeys were shipped out of Porterville this season—or in the neighborhood of 1000 birds.

H. J. Mercer of Los Angeles, member of the Ventura honey firm of L. E. Mercer & Sons, very recently sold a carload of extracted honey, stored at Castaic, to a Ventura agent for immediate shipment to London, Eng.—last year's honey, but of excellent quality, and it netted the Mercers 6 cents a pound.

Does Not Favor the Appointment of Liquidators.

TO THE EDITOR:—I request permission through your columns to state some of the reasons why I deem the proposal to appoint Messrs. Childs and Pettit and Lyons to liquidate the business of the Cured Fruit Association very objectionable and injurious to the interests of the Association.

We learn from the published statements that the assets of the concern consist of claims against its own members, against the packer's company, and

perhaps another disputed account, amounting together to some \$220,000, and cash in bank to about \$80,000 more, so that the sums liable to come into the hands of liquidators will not be less than \$80,000, and may amount to as much as \$300,000. It is not usual to entrust such large sums to the management and discretion of persons appointed by law without taking bonds from them for the faithful performance of their duties, as are required and given in the cases of executors, receivers, and the like. These gentlemen are to give no bond or security whatever. Nor is their personal responsibility so great as to form a guaranty of itself. The county assessment roll does not show them to be persons of any considerable means. I intend no reflection on the integrity of any of the gentlemen, but they have to liquidate the concern according to law, and a very blind and stupid law it is. The most experienced and wisest are liable to make mistakes. If by carelessness, oversight or neglect of others we should sustain losses where are the members to look for satisfaction or redress?

Altogether I see no prospect of any ability in the liquidators superior, or even equal to that of the present directors, who are, on the other hand, fully acquainted with all the details of the business to which the gentlemen proposed are entire strangers. The affairs of the company appear to be in a pretty complicated tangle. There are at least 3700 open accounts on the books, every one of which has got to be settled in some way. The man who would undertake to complete that task within six months, and that without any previous acquaintance with the particulars of the company's affairs, appears to me to possess an amount of courage amounting to rashness. Such light-hearted daring does not inspire confidence; it seems akin to folly, rather than to ordinary business prudence.

Does any one suppose that the present directors will surrender the assets, property and control of the Association to the proposed liquidators on the production of any number of postal cards addressed to Mr. Welch asking appointment of Messrs. Childs, Lyon and Pettit as liquidators? It would be very unwise of them to do anything of the kind, and we may be sure they will not. What do they know, what do any of us know about the genuineness of the 2700 signatures on these postals? That must be affirmatively and legally established. The liquidators must, therefore, commence a suit and get a judgment directing the property to be turned over to them. But at the outset they meet the difficulty: who are to be plaintiffs and who defendants in that suit? The rights involved are not those of the proposed liquidators on the one side and the present directors on the other; the former are but the appointees or attorneys in fact of the 2700 members who sign their appointment, and the right to appoint and the fact of appointment are the points involved. Surely the principals—the 2700 signers of postal cards—are to be heard in the case, as their right is in question. And again the 1000 or 1200 who by refusing to sign show their objection to the appointment, have also a right to be heard. They claim that the lawfully chosen directors shall remain in charge of the affairs of the Association, until legally removed. Surely they must be parties to the suit, if their rights are to be passed on. So we have an action against 1000 or 1200 defendants and perhaps in the name of double as many plaintiffs, independent of possible delay by appeals. Do the gentlemen who so light-heartedly propose this measure expect to get through such a suit in six months? They will scarcely get their process served in that time. And at the end of six months the title and right of the persons appointed to liquidate expires. What then becomes of our property?

These are not the only objections to the proposed mode of liquidation but surely they are sufficient.

Menlo Park.

JOHN T. DOYLE.

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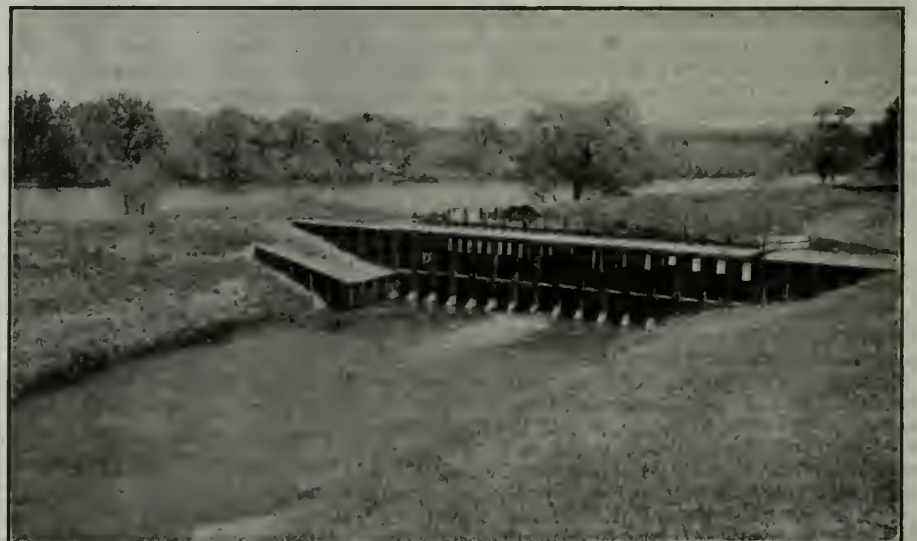
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Agricultural Review.

ALAMEDA.

TRUCK FARMING.—Niles Herald: Plowing and vegetable planting are now well under way in this section. Greatly increased acreage is being planted to vegetables in the hills.

BUTTE.

HO! THE AUTOMOBILE.—Oroville Register: There is a good chance in this section of an automobile passenger coach between Oroville and Chico or Oroville and Biggs.

THE REAL THING.—Chico Enterprise: The rock crusher recently purchased by the board of trustees is working most satisfactorily and is smashing rock at the rate of ten tons per hour. Henceforth nothing but crushed rock will be used on the streets of Chico.

OFF FOR MONGOLIA.—Gridley Herald: Henry Capler, whose experiences in the north of China were mentioned in the Herald last week, is besieged with applicants who wish to go with him on his return to the gold fields of Mongolia.

HORSESHOERS ORGANIZED.—Recently the horseshoers of Chico found it necessary to organize and raise prices on their work, for the reason that the steel and nail trust had advanced prices to such an extent that no profit was possible under existing prices. Those of Marysville, Lincoln, Biggs, Gridley and other places have done the same. The organizations have no connection with any labor union.

FRESNO.

MORE WINERIES NEEDED.—The experience of vineyardists in disposing of their second crop of grapes this year has convinced all of the necessity of building several new wineries about Selma. The Sanger Herald says: The association wineries in this part of the State crushed 60,000 tons of grapes during the season of 1901, whereas this year they have already crushed over 130,000 tons, and there's more in sight.

OIL FOR HOUSEHOLD FUEL.—Sanger Herald: It will not be long until oil comes into general use as fuel in this section, a number of heating and cooking stoves having already been fitted with the latest improved burners for distillate.

SUPPLYING SAN FRANCISCO.—Daily Republican: A shipment of fine palm leaves, grape vines, pomegranates and other West Park productions for Thanksgiving day decorations was made to the Young Women's Christian Association, San Francisco.

MORE ARIZONA STOCK.—Sanger Herald: Twenty-one carloads of stock cattle for E. R. Hooker have been placed on Miss Riley's foothill ranch of 4000 acres, situated 12 miles east of this place.

FRESNO COUNTY FOR APPLES.—That is the way people are beginning to talk, having special reference to the foothill districts. The Democrat says that 90% of the apples brought to that local market now are raised in northern counties of this State.

CONSOLIDATION OF WATER INTERESTS.—Daily Democrat: By the purchase of the interests of the San Francisco Savings Union and of J. A. McClurg Jr. for \$250,000 in the Consolidated Ditch Co., L. A. Nares, one of the largest stockholders in the Fresno Canal & Irrigation Co., has consummated what amounts to practically a combination of all the water supply companies north of Kings river. This means an end of litigation as to water rights which the courts have been engaged in deciding for years, and possibly the completion of that enterprise which means so much to the valley, the Clark's valley reservoir.

INYO.

LARGE APPLE CROP.—Inyo Independent: The apple crop this year is the largest ever known in this valley. William E. Cox is shipping 600 boxes to Los Angeles, which venture, if successful, will mean the opening up of a new market for our apples.

MENDOCINO.

PUBLISHED MILK TEST.—The Bridgeport creamery publishes the names of its patrons and the result of the semi-monthly milk test for each in the Ukiah Press.

KINGS.

PEACE FOR FARMERS.—A more peaceful and united state in ditch irrigation matters has lately come about, with apparently good prospects for remaining.

DAIRY STOCK FROM ARIZONA.—Fifty-five milch cows and thirty-five heifers—Holsteins—from Arizona were recently added to the Cross-Augsburg Co. dairy, near Hanford.

SETTLING A NEW SECTION.—The new

subdivision of the grant which lies in this county has hardly been placed on the market, yet fifteen families have been located and five new houses are already in course of construction.

MERCED.

A MERCED EXHIBIT AT CHICAGO.—Merced Sun: Isaac Bird, manager of the Chowchilla ranch, shipped two carloads of Chowchilla stock for exhibition at the annual Livestock Exposition at Chicago, which will be held November 29th to December 6th. The shipment includes forty Shorthorn calves. At the exposition last year Mr. Bird captured a number of prizes for Chowchilla stock.

PLACER.

PATRONS OF HUSBANDRY at Loomis, Nov. 29, afternoon, discussed the "Disposal and Distribution of Fresh Fruits," and "Rights and Legal Rules of the Water Company," at an open meeting, to which all interested were invited. A. R. Sprague, C. D. Harvey and others were among the speakers.

INCREASED 250 PER CENT.—Auburn Republican, Loomis Cor.: The local organization of the California Fresh Fruit Exchange held their final meeting of the season on Saturday last. The business of the Exchange has increased 250% over last year, and over \$1000 profits or dividends was distributed among the members.

SACRAMENTO.

A WHEAT EXPERIMENTER.—Record-Union: Findley McMillen of Fair Oaks, one of the closest students of wheat culture in this section, is this year experimenting with Chilian wheat which has been recommended to him by Consul Mansfield at Valparaiso. The grains are plump and large. Mr. McMillen has only just planted them. Last year he raised experimentally ninety-five pounds of red life (also known as northern hard and spring red) wheat, and was pleased at the results. He has also experimented with square head English master, the seed of which he received from Warwickshire, England, and was pleased when he threshed out twenty pounds from the four ounces he sowed. He is inclined to believe that the English wheat will be a big producer.

SAN DIEGO.

SAN DIEGO HOLDS THE BANNER.—"Old Mission" olive oil, made by E. W. Akerman, has again brought honor to San Diego and California, having lately been awarded gold medals and diplomas of honor at the international exhibitions just concluded at London, Eng., and Lille, France. These awards were the highest over all competitors, including those from Italy, Spain and France.

SAN JOAQUIN.

OIL SAND FOR ROADS.—Independent: Superintendent C. L. Newton has ordered two carloads oil sand from the Kern district wells, for the purpose of testing its efficiency for repairing oiled roads. It is said to be superior. It costs nothing but freight from the wells.

GERMAN COLONY.—Several Dakota families have arrived in Lodi and are paying good cash prices for the places they get.

SAN LUIS OBISPO.

CARISSA'S ADVANTAGE.—The soil of Carissa plain, San Luis—"desert," contends, says F. R. Wertmuller, a graduate student in the Agricultural Experiment Station of the University of California, about twenty-eight times as much phosphoric acid—a rare and valuable ingredient of soils—as the average soil of the State.

ARROYO GRANDE'S SOIL.—A recent analysis shows as follows: Mechanical analysis—Medium sand, .04%; fine sand, .40%; coarsest silt, 3.89%; coarse silt, 2.70%; medium silt, 7.40%; fine silt, 2.30%; finest silt, 53.01%; colloid clay, 26.38%; total, 96.12%. The water capacity of the land is very great—saturation point being 67% by volume and 77% by weight. Chemical analysis—Fine earth, all. Analysis of fine earth—insoluble matter, 53.43%; soluble silica, 19%; potash, .67%; soda, .18%; lime, 2.11%; magnesia, 2.26%; br. ox. of manganese, .06%; peroxide of iron, 5.23%; alumina, 7.40%; phosphoric acid, .71%; sulphuric acid, .22%; carbonic acid, 1.82%; water and organic matter, 6.63%; total, 99.72%.

SANTA BARBARA.

OIL PROSPERITY.—San Luis Obispo Tribune: The Pinal Oil Co.'s recently struck flow is estimated at 100 barrels a day of 30° oil secured at 1582 feet of depth.

IRRIGATION OF WALNUTS.—Santa Barbara Press: A. D. Martin of Goleta is satisfied that irrigation pays. Last year a certain portion of his walnut orchard returned a small crop of inferior nuts. This year he irrigated these same trees

and some of the finest walnuts ever seen in Santa Barbara are now at the Press office, having been picked from the same trees. These nuts are large and clean and the meat is finely flavored.

SANTA CLARA.

ERADICATING ORCHARD PESTS.—San Jose Herald: J. L. Hoffman about two years ago put forth, an insecticide of his invention, on several orchards throughout the valley, and by examining them this fall he found no borers, trees nice and clean and large fruit, and trees made a wonderful growth. Where fornia was used there were also no gophers.

SUIT CHARGING FRAUD.—Suit has been commenced in the Superior Court by Karl H. Plate against W. H. Wright and his wife, Mrs. Myra Wright, G. Osborn and the San Jose Fruit Packing Co. to recover property valued at \$100,000. The complaint bristles with allegations of fraud in the way of diverting the profits of a fruit packing company—a practice which has become too common in the Santa Clara valley.

PRUNE EVAPORATOR USED.—Visitor: A new oil-burning evaporator has been built by the Campbell Fruit Growers' Union in the drying field, having capacity of ten or twelve tons in twenty-four hours. Something like 100 tons of prunes are yet on trays in the field to be dried.

SOLANO.

The county tanks are being filled with oil for the roads, as a rise in the price of oil is expected soon.

BARBED WIRE TELEPHONE.—Suisun Republican: A barbed wire telephone line has just been completed, connecting the farms in the Potrero hills with the town of Suisun, a distance of about 12 miles.

SONOMA.

PINKEYE AT PETALUMA.—Argus: Pinkeye has made its appearance among the horses in this city and vicinity. One man has sixteen horses ill with it.

NEW CREAMERY.—Sebastopol Times: Joe Gallagher has just completed a fine modern creamery on his dairy near Bodega.

THE BURBANK WALNUT.—Santa Rosa Republican: Luther Burbank is confident that the Santa Rosa soft-shelled walnut, originated by him, will prove to be the best walnut grown. It does well in Sonoma county, where there are about 800 young trees of the variety. The only way to get this walnut at present is to purchase the seed from Mr. Burbank, who has the only bearing tree.

VARMIN TRAPPER.—Healdsburg Enterprise: Dave Hopper recently caught a wildcat and an exceedingly large coyote. The sheep herds in that vicinity have been suffering considerable loss of late; but, thanks to Mr. Hopper's successful trapping, the destructive pests are becoming less.

STANISLAUS.

CALIFORNIA'S BUTTER TEST.—Modesto News: In the test made in New York by the National Buttermakers' Association, in conjunction with several government experts, it was carried on for six months this summer. J. H. Severin of the Modesto creamery won 92.33 points out of a possible 100, and thus gave California the highest State average among States in the contest.

CALIFORNIA ILLUSTRATED LECTURE.—Modesto News: E. L. Ayers has an unbroken string of sixteen counties reaching from Siskiyou to Stanislaus, inclusive, already contracted to support the new enterprise of an illustrated lecture course on California. The company has received an earnest invitation to present the entertainment in the more prominent places throughout the district to be represented by them, which they have decided to accept.

SUTTER.

JOHN MARKLEY has reconveyed most of the 7240 acres of tule land he recently bought to parties said to be closely connected with the State Board of Public Works—E. S. Brown, Scott F. Ennis, Geo. E. Randall, Peter J. Shields, M. A. Nurse, Samuel Montgomery, Jos. Creig and A. B. Rodman.

TEHAMA.

CORNING people are hunting for artesian water. W. N. Woodson, proprietor of Maywood colonies, has contracted for a 1200-foot hole to be bored on his property just north of Corning.

TULARE.

REGISTERED CATTLE.—Porterville Enterprise: A consignment of registered stock is expected this week from Henry county, Missouri, by the Pioneer Land Co. and Williams & Young. For the former there are two Hereford bulls and ten heifers, and for the latter six Short-

horn bulls, one jack and two fox-trotting horses, one of these latter for Dr. Harde-man.

WILL PLANT ORANGE TREES.—There will be considerable acreage planted out to orange trees this coming season in and around Porterville. Orders for over 15,000 trees have already been given and many are expected to close contracts very shortly.

IN ALTA IRRIGATION DISTRICT.—Visalia Times: Seth Smith is surveying near Orosi, subdividing 160 acres belonging to Coy Goodin into twenty-acre tracts, next week to begin like work on the 160-acre tract belonging to Dr. A. E. Hall of San Jose; and has also been engaged to survey a 240-acre tract in the same neighborhood belonging to a San Francisco bank. It will also be subdivided into twenty-acre tracts and placed on the market.

THE BIG WEIR DAM, just completed by the People's Ditch Co., cost in the neighborhood of \$18,500. The new weir is provided with about forty automatic gates, so arranged that in case the water raises beyond a given point they will open and permit the water to flow under and over them, preventing damage to the weir.

GROWERS JUBILANT.—Tulare Register: Old Tulare grain growers are feeling something of the enthusiasm that they used to feel for the grain business, and will seed their ranches to grain again this winter.

SULTANA'S FIRST CAR.—Sultana Herald: The first carload of oranges ever shipped from Sultana left here for the East Monday, November 17, the fruit all finely colored. There will be about twelve carloads shipped this year.

LOS ANGELES SETTLERS.—Porterville Enterprise: Four cars of milch cows from Los Angeles were unloaded at Tipton last week for points tributary to the creameries here for people who have moved up here from Los Angeles to go into the dairying business along Tule river.

WILD PIGEONS PLENTIFUL.—Visalia Delta: It is reported that millions of wild pigeons are roosting in the oak trees and feeding upon the acorns in the foothills east of this city.

A DEVELOPING APPLE BELT.—Orosi Offer: G. Bauman, near Auckland, is shipping apples to Fresno and San Francisco and realizing good prices. The country about Auckland and Badger will develop into the apple belt of Tulare county.

HAVE GOT "WISE."—A number of Orosi young men who have been working for wages have decided to purchase and improve small tracts of their own.

VENTURA.

DEVELOPING A NEW SECTION.—The Bakersfield & Ventura Electric Railway will be constructed on the block (wireless) system and run from Ventura and Hueneme to Bakersfield. Work is to be begun at the ocean end. Surveys are all made and from Ventura and Hueneme to Sunset all franchises and rights of way have been obtained. The possibilities of the freight traffic of the section through which the road is to go have been carefully canvassed and 27,800,000 pounds of freight yearly have been promised. There is said to be \$700,000 revenues in sight for the road the first year, not including oil. A survey is now being made for an extension of the line from Sunset to San Francisco.

YOLO.

FOR STOCK RAISING.—Winters Express: H. H. North and Fred Clift of Oakland have bought the Putah canyon Canned ranch of about 3000 acres, all but about 100 acres in the hills, to engage in stock raising, and will spend \$8000 or \$10,000 for improvements. The rich bottom land on the creek will be put into alfalfa.

RANDLING IN GRAIN.—Express Madison Correspondence: Most of the farmers who had not gotten in their grain before the last rain are reploting and randling it in.

Horse Owners! Use GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure
The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

In Vespero.

Come to the Evening Land, weary one,
loved one,
Come, for the day with its turmoil is
done;
Far through the pepper trees' low-droop-
ing branches
Glow the deep red of the fast sinking
sun.

Quickly he drops from the cleft in the
mountains,
Chased by night's crimson and gold, he
has fled;
Lift thy dear face to the air's benediction,
Soft falls the twilight like peace round
thy head.

Faster and thicker 'tis falling around us,
Now in the east shines a star, only one;
Still is the world, save one nightingale
singing,
Mourning a requiem low for the sun.

Far over our heads stretch the infinite
heavens,
Cloudless and deep. Ah, they lighten!
Behold
Star after star, peering forth through the
darkness,
Cluster on cluster its beauty unfold!

Here Ariadne's crown, star-jeweled, glis-
tens,
There Ursa Major climbs over the hill;
On to Olympus goes Pegasus flying,
Meteors shoot through the heavens at
will.

Jupiter proudly rides high towards the
zenith,
Venus' soft light sparkles low in the
west;
Scorpio, chased by the untiring Archer,
Flees with Antares' red light in his
breast.

There gleams white Vega, there blazes
Arcturus,
There flies the Swan down the Milky
Way's maze;
Now the whole firmament throbs with the
glory
Of stars, singing silent anthems of praise.

But see! in the eastward the mount tops
brightening,
Fainter is growing the Pleiades' gleam;
Look at the Galaxy! Slowly 'tis fading,
Passing, as passes a beautiful dream.

Steadily shows the faint light in the east-
ward,
Still growing brighter, and ever more
bright;
Forth bursts the moon, in her silvery
glory,
Earth's gentle guardian, Queen of the
Night.

—Isabel E. Owens.

Fiametta's Fishing.

Suddenly, right in the middle of the
summer term, just before haymaking,
father took it into his head to give
Harry a holiday, and carried him off to
Wales for five days' trout fishing.
Father was a keen fisherman, and he
was proud of Harry, who could throw
a fly very prettily for his age. "What's
the good of waiting till August?" said
father; "the trout aren't half so lively
then—it's his last chance before he goes
to school." So mother, who was al-
ways glad if father would go away for a
few days, on any pretext whatsoever—
he was such a stay-at-home man—let
Harry go, and they had a grand time.

The result was that Harry came
back to "talk fishing" from morning
till night. He kept "The Angler's
Diary" and "Cholmondeley Pennell"
on the table by his bed; Hardy Brothers'
price list was never out of his
hands; "The Fishing Gazette" was al-
ways carried off to the schoolroom the
very instant father had done with it,
and—as, of all enthusiasms, an enthu-
siasm for any form of sport is the most
catching—we were all infected. Fia-
metta most of all; for she ran after
every new thing with the ardor of the
Athenians. Moreover, her father was
just then salmon fishing in Norway,
which added to the entrancing interest
of the subject.

Not that there was any trout or
salmon fishing in our neighborhood;
water there was in plenty, but only
bottom fishing, and for that just then
we felt nothing but scorn. Still, the

lack of trout was not allowed to stand
in our way. You can fish out of a
window with a walkingstick and a piece
of string, and have excellent sport, too,
if only you have sufficient imagination.
Fiametta did it for hours at a time,
chanting the while a melancholy ditty
in Italian, with the refrain, "O
pescator di su l'Ave Maria," which
was equally depressing and impressive.
Harry was most scornful, but all the
same could not resist the temptation of
taking Paul down to the pond, and
showing him how to throw a fly; which
knowledge Paul immediately passed
on to us, together with a borrowed rod,
and Harry was exceedingly cross be-
cause we entangled his cast. However,
Harry was out of the way most of the
time, as he had to do extra lessons at
the vicarage to make up for his holiday.

About three days after he came back,
when the fishing mania was at its height,
the rain came down in torrents, and it
was, for us, a half holiday. Harry
went back to the vicarage directly
after luncheon, as the vicar said he
would take him that afternoon and let
him have the first fine one instead.
All luncheon time he kept groaning and
exclaiming, "What a day it would
have been for the artro; why, they'd
have taken worm the minute it touched
the water; what a glorious day it would
have been, with the water so brown.
Oh, blow!" and muttering and grum-
bling as he went, Harry struggled
into a mackintosh, leaving Paul, Fia-
metta and me at the open schoolroom
window to watch him jump the puddles
as he dashed down to drive to the
vicarage.

Father and mother were lunching in
Garchester; Miss Goodlake had gone
to her room to write letters; Lucy and
nurse and Dorcas were shut up in the
nursery, and the house was very quiet.

"I'll tell you what," Fiametta ex-
claimed suddenly. "We'll go and fish
from the loft steps under that porch
thing at the top. It's covered, so we
shan't get very wet; if we go quietly
no one will see us."

"And we'll take father's rods," said
Paul cheerfully. He wouldn't be half
as cross as Harry, even if we did get
the line a bit mixed."

"One rod will be enough," said Fia-
metta, as usual, making up everybody's
mind; "we can take it in turns."

"We'll bait it with worm because it's
so wet," said Paul. "That yard's a
perfect swamp; who knows but what a
fish might come there somehow?"

Paul and Fiametta were always ex-
pecting quite impossible things to hap-
pen; they had a way of saying, "I
don't see why it shouldn't," which quite
crushed any feeble glimmerings of com-
mon sense in me, and as the fishing game
was new and very attractive, I fear I
made no effort to dissuade them.

Softly, one by one, we crept down the
stairs to the gunroom, selected a rather
bulky looking gray canvas case from the
rack, and escaped by the ever open
back door without having attracted the
notice of any one.

Fiametta carried the rod, Paul a tin
box of bait and a fishing bag slung
gracefully over his shoulders, where,
however, it declined to remain, as the
strap was too long—he fell over it three
times as we went—and I was armed
with a large and heavy landing net.
Once outside, we ran, and, as the rain
came down as though the heavens pur-
posed a second deluge, we got thoroughly
wet before we reached the stackyard
where the cowsheds were. But that
did not matter; as Fiametta remarked,
"we ought really to be up to our
waists in water."

The steps up to the loft had a rail on
the outside, and at the top a good,
large, covered platform, also railed in.
It was a favorite spot with Fiametta,
who always wanted to act Juliet, and
lean over the balcony, while Harry or
Paul or Claude, from the vicarage—
who was prosaic in the extreme, but
very obliging—stood below, to be struck
dumb with amazement at the lovely
vision overhead.

They certainly were dumb, those Ro-
meos, for by no amount of instruction
and exhortation could they be induced
to come in at the right moment with
"What light from yonder window
breaks?" As for Claude, he would

stand with his hands in his pockets and
the most unlover-like grin on his face,
till upon one occasion Juliet became so
"exasperated" that she took off her
shoe and threw it at him, hitting him
on the nose.

To-day, however, there was no ques-
tion of romance. Fiametta might have
been Lady Isobel Berners herself, so
keen and determined was she. It took
a long time to set up the rod, and we
should never have managed the reel
and line but for Paul, who had profited
by his lessons from Harry.

When all was in order and a dis-
gusting looking pink worm was writh-
ing on the hook (Fiametta hid her eyes
while it was being impaled, but lent
Paul her handkerchief directly after to
wipe his fingers), she leaned over the
railing and proceeded to cast in a most
business-like manner into the slush be-
neath. There was quite a big pool in
the middle of the yard, and into the
midst of this Fiametta managed to
throw her worm, for the rod was fa-
ther's best split cane, and very long.
We talked in whispers lest we should
should disturb the fish; a whole quar-
ter of an hour went by and nothing
happened, when suddenly a white duck
came waddling in from the stable yard.
Fiametta gave the rod a whisk and the
worm lay on the ground wriggling
not three yards from the duck. . . .
The reel went "whirr," the duck gave
a loud "quack," and, half running, half
flying, made across that yard in the ut-
most terror and consternation.

"Hold him up! let him go! follow
him!" cried Paul, in the greatest ex-
citement, as we all three tumbled down
the steps into the yard. I grasped the
landing net, Fiametta hung on to the
heavy trout rod, which bent almost to
snapping under the strain, while that
unhappy duck, with "squawks" that
got hoarser and weaker as the mo-
ments passed, went flapping and
tumbling all over the yard. "Can't
you land him?" gasped Paul; "wind
him in a bit; give me the landing net,
Janey."

Fiametta flung the rod from her with
a sudden shriek. "Oh, poor duck,"
she sobbed, "how we must be hurting
it—why, the hook is in its throat—
what shall we do? Oh, catch the duck
and find somebody to take it out! Oh,
poor, poor duck!" and Fiametta ran
distractedly to and fro, wringing her
hands and sobbing while the rain
washed the tears from her cheeks.

Away went Paul with the landing
net, making futile plunges at the duck,
which doubled back into the stockyard,
winding the line around Paul's feet as
it ran. I had just picked up the rod
and was wagging it helplessly when
Paul and the landing net went charg-
ing into father, who suddenly appeared
in the archway leading to the stable-
yard.

"What on earth?" exclaimed fa-
ther, and stopped, for the duck came to
a flopping standstill just at his feet.
Father made a grab at the duck,
opened its beak, did something with a
sort of a jerk and threw it from him,
when it waddled gayly away quacking
hoarsely.

Then he turned to us. Fiametta had
repossessed herself of the rod and was
winding in the line rather hastily. "I
caught it," she said, proudly. It must
have weighed forty pounds, the rod
bent so; I should have landed it, too,
only I remember how it must hurt the
duck, poor thing! I'm always humane
to animals."

"You give me that rod," cried fa-
ther, almost snatching it out of her
hands. "I wouldn't have that rod
hurt for twenty pounds—ducks, in-
deed!" and her father backed under
the archway out of the wet to take the
precious rod to pieces there and then.

"You've made a precious mess of
the line," he said in a minute, "but
upon my soul, you've done no damage.
Go in out of the wet, quick!" and
stepping out of the archway father
drove us before him to the house. Fia-
metta's blue dress was almost black,
it was so wet. Paul's smock hung
upon him like classic draperies; we
were all covered with mud from head
to foot.

In an all too short ten minutes all
three of us were in bed, while nurse,

Miss Goodlake and Dorcas each stood
over one unhappy child with a huge
scalding glass of milk.

No child was ever allowed to have a
cold during nurse's reign. Her meth-
ods were arbitrary and unpleasant, but
perfectly successful, and no one
dreamed of interfering with her. "I'll
'ave none of yer snuffin' sneggin' children
'ere," she would remark, scornfully;
"it's all mismanagement and fool'ardy
nonsense, that's what it is; them guv-
nesses is no use; the minit I turns my
back, off those childring goes a-fishing
for poor innocent poultry as never did
no one any 'arm. I never did 'ear such
goings on." We were not allowed to
get up that day. Tears, prayers and
protestations were of no avail; wet
feet were bad enough, but to get wet
through was absolutely unpardonable.

Father crept up to see us during the
evening, stepping with an elaborate
softness that made every board creak
under his sixteen stone. He was
dreadfully afraid of nurse, and looked
as though he had stolen the cryallized
fruits he had brought us for our com-
fort.

Fiametta sat up, demanding sternly,
"Are we in bed for the rod, or for get-
ting wet, or for hurting the duck—
which is it?"

"Perhaps it's for the lot," said fa-
ther, sitting down on the end of her
bed, "and you know you had no busi-
ness to take the rod, if it was you that
took it."

"We all took it," I interposed.

"Oh, yes, we all took it," Fiametta
went on, "and I'm sorry—very sorry,
'specially about the duck and going to
bed, it's so dull. I suppose that poor
duck will have a sore throat for a long
time," and Fiametta, blissfully uncon-
scious that Dutton had wrung the poor
thing's neck an hour ago, shook her
head, solemnly; then she brightened.
"But you can't think of all these at
the time, can you, not when you feel
the first tug?"

And father, quite forgetting that he
had come to moralize, slapped his leg
joyously, exclaiming, "Bless you,
there's nothing like it, nothing like it
in the world; but it doesn't do to be
to eager, never strike too soon, and"
—with a sudden recollection of the
muddy rod—"never, never drop your
rod for anything."

Fiametta stared hard at him for a
minute, then she said, severely, "I
don't believe you are the least bit sorry
for that duck, really."—L. Allen Har-
ker in the London Outlook.

In Time of Influenza.

It may be said that the handker-
chief is the most active agent in
spreading la grippe. The mother
wipes the little patient's nose, then
thoughtlessly tucks the handkerchief in
her belt, to be used upon her own or
the next small nose that needs atten-
tion, and the results are just what
might be expected, for the patient's
expectoration is, of course, alive with
disease germs. The handkerchiefs or
cloths may be kept under the pillow, or
in easy reach of the mother, and when
soiled taken to the woodshed and put
to soak in cold water in which a little
odorless disinfectant (this comes for 50
cents a bottle and can be procured at
any druggist) has been stirred, then
when you have leisure attend to them,
putting them into a wash boiler, more
than covering them with cold water in
which pearline has been dissolved, al-
lowing two dessertspoonfuls of the pow-
der to each pailful of water used (this
is a large allowance, but the disinfect-
ant hardens the water, so more is
needed), then letting them boil briskly
for about twenty minutes, when the dis-
agreeable mucus will have been dis-
solved so that the articles can be
rinsed very quickly—a great im-
provement upon the old method of
rubbing each slimy piece before putting
it into the boiler. Do not let the
articles boil over twenty minutes;
longer might cause them to yellow. The
disinfectant spoken of above is also
excellent for spraying the patient's
room, and for pouring (only a small
quantity) down the bowl or vessel.

DOMESTIC ECONOMY.

A Few Good Recipes.

SOME CABBAGE RELISHES.—Slice fine and boil until tender in just enough water to keep from scorching. When tender, let the water boil out and brown just a little, stirring in a small piece of butter. Add one teacup sweet cream, and when it is boiling nicely stir in enough vinegar to give just a little acid taste. It should be stirred constantly when the vinegar is put in or the latter will curdle the cream. Onions cooked in the same way are very appetizing.

Or this: Take three eggs, six tablespoons vinegar, three tablespoons melted butter, three teaspoons mustard, one-half cup sugar, pepper and salt. Cook until thick. Pour over the cabbage when cold and ready to serve. Some like it better when only one egg is used to the above proportions of other ingredients.

SMOTHERED FISH.—As thin as they can be shaved, cut from the end of a round of pork two slices. Slowly fry, then split, cleanse and lay in the gravy a good-sized fresh fish, of the cook's favorite variety. On the fish place a large lump of butter—half pound is the rule, although less will make a very satisfactory dish. Cover perfectly tight and set the dish in a kettle of boiling water, or use a double boiler. Keep the second vessel boiling forty minutes. The secret of success is in keeping out all air. If directions are followed closely, the dish is gratifying to fish epicures. Two tablespoons water with the gravy are preferred by some cooks. Add that before putting the fish to smother.

POTATO APPLE DUMPLINGS.—This recipe has come down through three generations and is a favorite wherever it goes: For a family of six pare nearly half a peck of good potatoes. Boil, being careful not to let them get overdone, but pour water off as soon as they break easily. Rub through a colander so that they will come out dry and mealy. Add to them a lump of butter the size of a small egg; salt to taste; add one pint sifted flour. Mix thoroughly. Flour the molding board and turn out to cool. Have apples ready, also a large iron pot of boiling water. As each dumpling must be tied separately, have six or eight squares of muslin and string ready for use before beginning operations. Take a piece of dough and roll it or part into size of a saucer. Put three or four quarters of apple in center, and then shape the dough all around the apples, making it look round and smooth. Flour each cloth and tie up tightly. The pot must be kept boiling from start to finish one hour. Any good cooking apple may be used, but an inferior one spoils the dumpling. When serving them, plunge each cloth into cold water, and with a knife and a little dexterity they can be safely landed on a plate without breaking. This, however, does take some practice. Some prefer hard sauce, made of three parts sugar to one of butter; but with good cream and sugar, a little nutmeg or cinnamon, the dish is delicious.

FOR WHERE THE WALNUTS GROW.—Nut and Chicken Loaf: Procure a nice tender chicken and bone it carefully with very sharp knife. Cut off all ragged pieces around outside. Mince these finely, then mix with one cup minced Brazil nuts or walnuts one cup breadcrumbs, piece of butter size of walnut, some chopped watercress, salt and pepper to taste. Moisten with egg, then spread all over the chicken flesh, roll up and sew together with white thread. Roast in oven or stew and press under weight until cold. Can be eaten either hot or cold. Garnish with parsley.

Walnut and Chicken Cutlets: Take twelve walnuts, shell, mince and bruise in mortar. Add one cup well minced chicken, one cup graham breadcrumbs. Pepper and salt to taste, moisten with egg, then shape into the form of meat cutlets, roll in cracker dust and fry a nice brown.

Nut and Veal Croquettes: Use one cup cold minced veal, eighteen minced

blanched almonds, one-half teaspoon salt, pepper and paprika to taste, one egg, one cup tomato sauce. Mix meat, almonds and seasoning together and moisten with beaten egg. Roll into balls or croquettes, place in baking tin and pour one cup hot tomato sauce over same. Cook for twenty minutes in a hot oven. Serve in platter decorated with watercress.

TURKEY TIMBALES.—Cook together in the double boiler one rounded cup breadcrumbs, one cup cooked turkey chopped fine, one teaspoon finely chopped onion, same of chopped celery leaves, $\frac{1}{2}$ cup milk. Add this mixture to the beaten white of one egg to which has been added $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon pepper, a pinch of celery salt. Allow this to cool. Grease nine cups, line with sifted breadcrumbs, then with the timbale mixture. Fill with the following: Heat one cup milk, melt one tablespoon butter, add two tablespoons flour and then the hot milk a little at a time. Chop fine and add $\frac{1}{2}$ cup turkey, one hard boiled egg and six medium-sized mushrooms. Season with pepper and salt. Bake in a pan of hot water twenty minutes. Make a sauce by heating one cup each of milk and turkey stock, melt $\frac{1}{2}$ tablespoon butter, add tablespoon flour, then add the hot liquid a little at a time. Season with salt and pepper. Just before serving add one beaten egg.

The Housekeeper Should

Always keep steel ornaments in powdered starch to prevent their rusting.

Always make starch with soapy water, which will give better gloss to the linen and prevent the irons from sticking.

Always invert the washtub and put a little water on the bottom of them, so they will not dry out and leak before the following washday.

Always rub a little soft (not melted) butter over the top of bread dough when in a mass, and after being molded into loaves, this prevents a hard crust.

Never read, nor sew, nor write immediately after coming from comparative darkness into a bright light, if you have good eyes and would keep them good.

Always see that the shoes are properly cared for when taken off at night; straighten and smooth out the wrinkles, draw down from the instep and pull up from the heel.

Always open tinned fruit or vegetables an hour or two before they are needed, that the flavor may be improved. And always empty the contents of a tin can into a glass or china dish as soon as it is opened.

Never despair when linen seems hopelessly scorched from an overheated iron; soak the stain in luke warm water, squeeze lemon juice on it, sprinkle a little salt over it, and place in the sunshine to bleach.

Never paper a wall that is inclined to be damp, without first making it impervious to moisture, which may be done by applying a varnish of one part shellac to two of naphtha. The disagreeable odor will soon disappear and, after papering, there will be no more trouble from moisture stains.



All Hands On Time

The second hand,
the minute hand,
the hour hand, run
in unison on an
ELGIN
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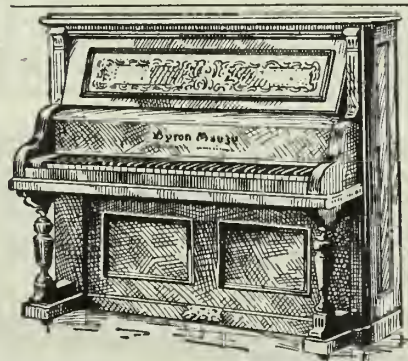


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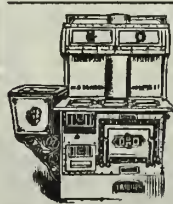


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The Markets.

General Market Conditions.

AN ACKNOWLEDGMENT.—The PACIFIC RURAL PRESS is indebted to Supervisor W. W. Broughton, who is also publisher of the Record of Lompoc, for a box of assorted apples—Yellow Bellefleurs, Yellow Newtown Pippins, Missouri Pippins and Rhode Island Greenings—choice commercial specimens of an excellent crop there this year. So far as their quality is concerned they rank with Oregon apples in the San Francisco market, and are notable for the fineness, firmness and juiciness of their meat.

GRAINS.—At Chicago during the week wheat and corn, after fluctuating through a range of about 2c each, were on Tuesday at a better price than they began the week before at in the speculative market, and the cash market prices were in the case of wheat 1c and in that of corn 2½c better.

CHICAGO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Tuesday.....	74½@74¾	76 @76¼
Wednesday.....	74½@75	76½@76¾
Thursday.....	—@—	—@—
Friday.....	74½@74¾	76½@76¾
Saturday.....	74½@73¾	76½@75¾
Monday.....	73¾@72¾	75¾@75¾
Tuesday.....	72¾@72¾	75 @76

CHICAGO CORN FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Tuesday.....	52½@53	42½@42¾
Wednesday.....	53¼@54¼	42½@42¾
Thursday.....	—@—	—@—
Friday.....	56 @55	43 @42¾
Saturday.....	55¼@54	43¼@42¾
Monday.....	53¾@53¾	42¾@42¾
Tuesday.....	54 @55½	43¼@43¾

At Williams, Colusa county, D. Levy, the principal grain buyer, who is understood on good authority to be in friendly touch with Eppinger & Co., bought week before last 98,000 sacks of wheat for December delivery out of Williams, paying, it is now stated, an average of \$1.25 per cental delivered at Williams, usual freight rate to San Francisco by rail being 0.00 per cental.

PRUNES.—Special advices to the PACIFIC RURAL PRESS are that, contrary to some local newspaper reports there, the quantity of small prunes still on hand in the Santa Clara valley is very light in comparison with former years. The quantity of small prunes graded out is less proportionately to the full amount of fruit than for several years past. There is no old fruit carried over to interfere with sales of the remainder of this year's crop, the old small fruit having been practically disposed of; and there is no reason apparent to growers or operators why every pound of all sizes of prunes this year cannot be sold and consumed before the coming of the 1903 crop. Prices have advanced during the week and the market is very active. More than 100 carloads have gone from a dealer source within the last two weeks, with orders for more than twenty cars more unfilled. Speculators are quietly making offers for what would probably total more than half of all the now remaining stock in the valley.

The quantity of fruit in the hands of the growers being small, but few are in a position to take advantage of the advance in price. In the Santa Clara valley the Campbell Fruit Growers' Association has sold every car in its possession, the Berryessa Fruit Growers' Union has not a pound of prunes on hand, and the other local unions of growers throughout the valley are in almost similar positions. The California Packers' Co. bought nothing on account this year and is well cleaned up.

Though the advance in price comes rather too late to be of benefit to the growers, the moral it conveys is too evident to be overlooked. It is a fulfillment of the prophecy of a few growers who advised at the beginning of the season that the growers retain possession of the crop and feed it to the hogs, rather than sell on a 2½-cent basis.

Current commercial advices are that November shipments have been as large as those of October, and that at least two-thirds of the crop has gone forward to foreign and domestic points.

ORANGES AND LEMONS.—The Riverside Press, on the basis of reports from its correspondents selected for the purpose, estimates the coming orange crop in southern California at 18,000 cars, plus 2000 cars lemons, localities as follows: Riverside, 4000; Redlands, 1800; Pomona district, 1800; Ontario district, 1500; Colvin, 1200; Alhambra, Pasadena, San Gabriel, 1100; Highland, 750; Corona, 750; Ventura county, 250; San Dimas and Lordsburg, 300; Fullerton, 700; San Diego county, 300; Orange and Santa Ana, 600;

Azusa, 600; Rialto, 375. Picking began about Redlands on Nov. 24th, and holiday shipments from there are now fairly well under way.

The first car of Navel oranges from Tulare county that reached the New York market brought \$1830. The latest reports show a total of 400 cars of oranges and 25 cars of lemons shipped from the Tulare region, against 421 cars of oranges and 89 cars of lemons last year to the same date. Of this year's output the Earl Fruit Co. has sent 191 cars, the various growers' exchanges 105 cars, in oranges. A. Gregory & Co. are buying and shipping oranges f. o. b. from Sultana, paying, the Herald of that place reports, 2½ cents per pound.

At Sanger three packing houses are being taxed to their utmost capacity to handle the oranges that are being hauled in by team from the groves 5 miles east of town, and from three to five carloads are going eastward daily.

HOPS.—The Ukiah Press gives a table, compiled largely by Hugh Cox, buyer for Edmund C. Horst, which shows that there were produced this year in Ukiah valley 6279 bales, in Redwood valley 66 bales, in Potter valley 230 bales, in Anderson valley 94 bales, around Hopland 744 bales, Largo 678 bales, and in Lake county 398 bales, a total of 8489 bales. The Press says the bulk of these are sold, but holders of the remainder refuse to consider present offers, some holding for as high as 30c. Most of the hops sold this year went for 24½c, one lot going for 25c and some for 21c and 24½c. A portion of the crop was contracted at from 9c to 15c. Santa Rosa reports are that C. C. Donovan had secured 50 bales of hops at 26c. This is said to be the only lot of Sonoma county hops sold in the last two months. It is believed that only 14,000 bales in Oregon, 7000 bales in Washington and 12,000 bales in California now remain unsold, and that Sonoma growers who held have mastery in the situation, the New York crop being understood to be only 20,000 bales, where it was 65,000 bales last season. It is claimed by leading local hop men that never before have there been so few hops in first hands at this season of the year. It is said in the country that dealers are quoting lower prices and at the same time picking up choice lots in Sonoma county at even higher prices than quotations here given. A little further or more complete control of this year's crop would enable them to take a firm tone toward other buyers, regardless of the remnant of the crop then in growers' hands.

POTATOES.—It is locally reported that at the old lake between Lakeville and Sonoma there will be a loss of some 3000 sacks. Too much rain. Price at Stockton increased from 42½c to 50c during November, but the shipments up to some days ago were locally said to be lighter than for years past at that date. It is said there that the present high freight rates will not permit local dealers to compete with the commission men in the Middle States, who can ship to Texas, New Mexico and Arizona much cheaper than the Stocktonians can. Present shipments are mostly confined to this State. The crop at Lompoc is not as large as usual, but is of good quality; excellent prices are being expected there.

NUTS.—The Santa Ana Walnut Association disposed of the culls at 8c a pound to same firms which brought the grade walnuts. Some growers had already disposed of their culls at 5c per pound. There were only about four tons of culls gleaned from the 750 tons of nuts handled by the Association.

At Anaheim Mr. Neff reports the sale of a lot of hardshell walnuts at 10½c and soft shells at 11½c a pound—one of the best sales of the year.

POULTRY.—The following from the Red Bluff News sheds some light on where turkeys come from to market: "The scarcity of turkeys in the San Francisco market is being supplied from Oregon. A shipment of 90,000 pounds from Oregon passed through here Sunday, and to-day another consignment of 30,000 pounds was made part of a special 'turkey' train that left here soon after the noon express. The special will pick up shipments at all points on the west side, and Corning, Orland and Willows are important shipping points. Less than 1000 pounds went from Red Bluff, but the shipments will be much heavier from here on Tuesday or Wednesday." This was published in the News before Thanksgiving.

BEANS.—Stockton advices are that local stocks are large, with a good portion of the crop still on the farms. About all have been harvested. The crop was quite large and most of the varieties of fine quality, though in some places the Pinks were damaged slightly by storms. At Ventura the largest shipment of Lima beans to foreign markets ever made from that county was made last week by Levy

of Oxnard. He shipped 1200 sacks of Limas to England, 500 going to London and 700 to Liverpool. Mr. Levy has also shipped 1000 sacks to France.

HONEY.—The Herald says: J. C. Dyer of south Sanger, who has 260 stands of bees and ought to have obtained 1500 gallons of extracted honey therefrom this fall, got only 270 gallons together, while others report even poorer results. The sale of a carload of extracted, last year's honey, the past week at Ventura for London undoubtedly shows an advance over previous quotations on account of foreign demand, though the news would be more satisfactory had the grade of honey been stated. The sale also had the advantage of ocean freight rates.

WOOL.—According to the Annual Wool Review, just issued, there are 42,184,122 sheep in the United States, exclusive of lambs one year old, and the clip, exclusive of pulled wool, during the last year comprised 274,341,032 pounds, as against 265,502,328 pounds in 1891. This shows an increase of about 9,000,000 pounds. The number of sheep reported a year ago was 41,920,900. The only States which show any considerable increase in the number of sheep since 1901 are Kentucky, Montana and Wyoming.

BUTTER.—Dairies and private creameries in the coast counties, especially Marin and Sonoma, are shipping butter freely, but it is said that their goods do not grade up to anywhere near the demands of the market. At Lompoc stores are selling choice ranch butter, but up in creamery fashion, in full-weight packages that in many cases equals the creamery output, and sells for quite a per cent less.

HAY.—The Petaluma Argus says: "On Saturday George P. McNear bought 10,000 bales of hay from the Cotati Co. and 2500 bales from Hugh Comstock. The hay will be stored at the Cotati warehouse. Alfalfa hay is selling freely at \$9.50 per ton f. o. b. cars at Ethaca, southern California, although some producers are holding for \$10."

VEGETABLES.—Tissue-paper-wrapped tomatoes are being shipped East from Orange county, southern California.

San Francisco Produce Market.

SAN FRANCISCO, Dec. 3, 1902.

WHEAT.

How little relation the cash price for wheat has to speculative prices is made noticeable by comparison of the two for the past week. Speculative prices have declined continuously, and in two instances by long jumps from \$1.41½ to \$1.42 and \$1.41½ to \$1.43½ for December and May delivery, respectively, to \$1.33 to \$1.36½ and \$1.37½ to \$1.39½ for same, while cash prices as existing in the country sections of the State have remained steadily at \$1.40 to \$1.45 for No. 1 and \$1.47 to \$1.50 for milling. This fact, coupled with some facts connected with a large buy of wheat in the Sacramento valley, as mentioned elsewhere, and the fact that most of the increase of visible stocks of late has been at Port Costa, is confirmatory evidence to many of the ideas heretofore set forth in these columns that the "big four" operators have the wheat and are not being squeezed so hard in various operations as some could wish, except possibly in the way of charters, which continue to stand at extraordinarily low figures—11s 3d for Europe, 10s 6d and 9d for Sydney and 12s 6d for Melbourne, with continual chartering on Australian account. The chartered wheat fleet in port has a registered tonnage of 39,860, against 68,760 tons on the same date last year; disengaged, 52,000 tons, against 7100; on the way to this port, 204,000 tons, against 194,200. Recent arrivals of wheat from Walla Walla have caused offerings of wheat at San Francisco at \$1.32½ for No. 1, while the market price in the country seems to remain at \$1.40 to \$1.45. Whatever may be the actual effect as shown by events, shipments from the north are therefore, theoretically, a present element of weakness.

SAN FRANCISCO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Tuesday.....	\$1.42 @1.41¼	\$1.43½@1.41¼
Wednesday.....	1.39 @1.38	1.43½@1.40¾
Thursday.....	—@—	—@—
Friday.....	1.38¼@1.39¾	1.41¼@1.35¾
Saturday.....	1.33 @1.38¾	1.39 @1.38¾
Monday.....	No sales.	1.36 @1.36¾
Tuesday.....	1.33 @1.36¾	1.37¼@1.39¾

BARLEY.

Prices in the cash market have fallen off slightly since our last report, and there is little doing. "Futures" prices, however, have gone up by a considerable jump in the first of the week.

Feed, fair to good.....	1.22½@1.25
Brewing and shipping.....	—@1.27¼
Chevalier, fair to choice.....	1.55 @1.60

BARLEY FUTURES.

	—Dec—	—May—
	Opened.Closed.	Opened.Closed.
Tuesday.....	\$1.24½@1.24	\$1.29¼@1.27¾
Wednesday.....	1.22¾@1.23¾	1.25½@1.27¼
Thursday.....	—@—	—@—
Friday.....	1.22¾@1.22¾	1.27¼@1.27¼
Saturday.....	1.21¼@1.22¼	1.27¼@1.27¼
Monday.....	No sales.	No sales.
Tuesday.....	1.28 @1.28¾	No sales.

OATS.

Quotations personally given us last week were somewhat higher than those generally reported and were influenced somewhat by the expectations of some millers of continued rise, unless shipments of this description from the north should happen, which was feared but hardly expected. That they occurred, however, our table of produce receipts at this port shows, and their influence has been to lower quotations and keep dealings at about the same level of prices as has existed for some time. Local stocks decreased 1000 tons during November.

White Oats.....	1.25 @1.30
Black, for feed.....	1.10 @1.20
Black, for seed.....	1.27¼@1.35
Red, common to choice.....	1.12¼@1.25¼
Red, fancy.....	1.25 @1.30

CORN.

Stocks of this cereal also decreased considerably during the past month; imports of Western and considerable variation of quality and condition of California stocks combine to disturb this market and give a wide range of prices.

Large White, good to choice.....	— @1.50
Large Yellow.....	1.30 @1.50
Small Yellow.....	1.45 @1.52¼
Egyptian, Brown.....	1.15 @1.25
Egyptian, White.....	1.25 @1.35
Western, sacked, yellow.....	1.30 @1.35
Western, sacked, white.....	1.32¼@1.35

RYE

Is sluggish at quotations.

Good to choice.....	1.05 @1.10
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BUCKWHEAT.

Prices have a tendency upward. Forty tons arriving the past week did not enter the market, having been bought some time ago for then future delivery.

Good to choice.....	1.75@2.10
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FLOUR.

California, Family Extras.....	4.20 @4.45
Bakers' Extras.....	4.10 @4.20
Oregon and Washington, Family.....	3.50 @3.75
Bakers'.....	3.50 @4.00

FEEDSTUFFS.

Millers' prices to wholesale dealers:	
Bran, ½ ton.....	19.00@21.00
Middlings.....	22.00@25.00
Shorts, California.....	21.50@22.50
Barley, Rolled.....	25.00@26.00
Cornmeal, coarse feed.....	30.00@31.00
Cracked Corn.....	30.50@31.50

HAY AND STRAW.

Shipments by boat seem likely to end soon for lack of stock, without prospect of immediate relief to the market by rail.

Choice Wheat Hay.....	14.50@15.00
Good Wheat Hay.....	13.50@14.50
Other grades same.....	11.00@13.00
Wheat and Oat.....	11.50@14.00
Tame Oat.....	11.00@13.00
Second Quality Oat.....	9.00@11.00
Barley and Oat.....	8.00@11.00
Alfalfa.....	9.00@11.50
Straw, ½ bale.....	45 @65

BEANS.

Prices on dry stock are firm. Red Kidneys are scarce. Some growers are asking \$3 for large Garbanzas. The wet stock has been pretty well moved off this market to Southern States.

Prices to producers for choice round and carload lots on wharf, city:

Pea, 100 lbs.....	3.00 @3.25
Small White.....	3.15 @3.30
Lady Washington.....	2.75 @3.10
Pinks.....	2.40 @2.75
Bayos.....	2.60 @2.85
Red Kidney.....	4.00 @4.50
Limas.....	4.25 @4.35
Black-eye Beans.....	3.85 @4.10
Garbanzos, large.....	2.50 @2.85

PEAS.

It is believed by a number of prominent and reputable dealers here that Niles peas have practically all passed out of growers' hands, which does not seem to be the case with the Green variety. Some sales of the latter by jobbers within the last week are reported at \$1.70.

For choice stock in city dealers are paying:	
Green Peas, California.....	1.50 @1.65
Niles Peas.....	1.75 @2.25

SEEDS.

Alfalfa is quoted by largest jobbing dealers here as now selling at 11½c to 12½c per pound, with a rising tendency. Largest dealers say that the farmers by a little more care or wind force in screening their seed could easily beat the Utah seed for excellence, and command the export market to Australia.

For choice seed to producers, dealers quote:	
Alfalfa, Cal.....	10.50@11.50

Flax.....	2 @ 2 1/2
The following are selling at:	
Canary, in original packages.....	4 1/2 @ 4 1/2
Rape.....	2 @ 2 1/2
Hemp.....	4 @ 4 1/2

POTATOES.

The control of Salinas Burbanks, as well as Merced Sweets, is reported to have passed from growers to dealers, so that it is hardly worth while to continue quotations of prices to producers in this line. Salinas Burbanks are reported to be selling from the dealers who control them in jobbing lots to other dealers at from \$1.25 to \$1.35, and Merced Sweets at \$1.25. During the past week dealers have shown more interest in River Burbanks, and prices have risen somewhat on best grades, which are selling in the commission street at as high as 75c for fancy.

Principal dealers for choice large lots on wharf, city, are paying:

Burbanks, Salinas, per cental.....	75 @ 1 15
River Burbanks, good to select, per cental.....	40 @ 50
River Reds, nominal.....	30 @ 40
Sweet Potatoes, per cental.....	1 10 @ 1 15
Oregon.....	70 @ 1 05

VEGETABLES.

Vegetables are scarce. There is little demand for poor stock in any line, but really good stock brings almost any reasonable price, much depending upon the dealer's selling ability and trade connections. Los Angeles Egg Plant and Summer Squash have the field to themselves. Yellow Eastern Pumpkins have dropped decidedly. On the whole the street is cold and chilly and market dull and dragging.

Commission merchants report realizing for:

Beans, Lima, per lb.....	6 @ 7
Beans, String, per lb.....	6 @ 10
Beans, Wax.....	8 @ 10
Cabbage, choice garden, per 100 lbs.....	50 @ 75
Sprouts.....	5 @ —
Cucumbers, per large box.....	40 @ 1 00
Egg Plant.....	8 @ 10
Garlic, per lb.....	2 @ 2 1/2
Onions, per cental.....	40 @ 60
Okra, Green, per box.....	40 @ 60
Peas, Sweet garden, per lb.....	7 @ 9
Peppers, Chile, per box.....	60 @ 75
Peppers, Bell, per box.....	60 @ 75
Squash, Marrowfat, per ton.....	8 00 @ 10 00
Squash, Hubbard, per ton.....	8 00 @ 10 00
Yellow Pumpkins, Eastern, per ton.....	8 00 @ 10 00
Tomatoes, per large box.....	40 @ 1 00
Jerusalem artichokes, per lb.....	1 1/2 @ —
Rhubarb, per lb.....	4 @ 5

LIVE STOCK AND MEATS.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, per lb.....	7 @ 7 1/2
Beef, cows.....	6 @ 7
Veal, large, per lb.....	7 1/2 @ 8 1/2
Veal, small, per lb.....	8 1/2 @ 9 1/2
Mutton—ewes, 8@9c; wethers.....	8 1/2 @ 9 1/2
Lamb, per lb.....	9 1/2 @ 10
Hogs, dressed.....	8 1/2 @ 9 1/2

Dealers are quoting prices to producers for first quality live stock, less 50% shrinkage on cattle, delivered at city slaughter houses, as follows:

Cattle—Steers.....	8 1/2 @ 9
Cows and Heifers.....	7 @ 7 1/2
Thin Cows.....	4 @ 5
Calves, large.....	4 1/2 @ 5
Calves, light (gross weight).....	5 1/2 @ 6
Sheep—Ewes (gross weight).....	3 1/2 @ 3 1/2
Wethers.....	3 1/2 @ 4
Lambs, yearlings, per lb (live weight).....	4 @ 4 1/2
Hogs, hard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/2
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, bard, over 250 lbs.....	6 @ 6 1/2
Hogs, feeders.....	5 1/2 @ 5 1/2
Hogs, country dressed.....	7 1/2 @ 7 1/2

GAME.

Game is coming in plentifully and moves off fairly well.

Canvas Back.....	33 00 @ 6 00
Red Heads.....	1 50 @ 2 00
Mallard.....	2 00 @ 2 50
Sprigs.....	1 50 @ 2 00
Widgeon.....	1 00 @ 1 25
Small.....	75 @ 1 00
Teal.....	1 25 @ 1 50
Black Jacks.....	1 00 @ 1 25
Hare.....	1 00 @ 1 25
Cottontails.....	1 50 @ 1 75
Honkers.....	4 00 @ 4 50
Gray Geese.....	2 50 @ 3 00
White Geese.....	1 50 @ —
Brants, large.....	2 00 @ 2 50
Brants, small.....	1 00 @ 1 50
Doves.....	1 00 @ —
Snipes, English.....	2 00 @ —
Snipes, common.....	1 00 @ 1 50
Wild Pigeons.....	1 25 @ —
Rabbits.....	1 00 @ 1 25
Gray Squirrels.....	65 @ 75
Birds.....	20 @ 35
Crane.....	5 00 @ 6 00
Terrapin.....	1 50 @ 2 50
Frogs.....	2 00 @ 3 00

POULTRY.

Came through the Thanksgiving time in good shape. This week there have been five—some say six—carloads of Eastern stock in and sold at prices calculated to make the stock go. Four cars of Eastern to arrive next week from Monday to Saturday are all that dealers in that line expect now. First class young California poultry is the kind now in demand in home line, and it is expected the demand will continue and prices be good next week. Fancy dressed turkeys still meet with ready sale.

Small broilers should weigh from 1 1/2 to 2 lbs.; large broilers, 2 to 2 1/2 lbs.; fryers, 2 1/2 to 3 lbs. at the highest; all over that go as young roosters if

they have no spurs and the breast bone is soft.

Dealers quote prices for

Turkeys, alive, choice young.....	16 @ 18
Turkeys, alive, Hens, per lb.....	16 @ 18
Turkeys, alive, Gobblers, per lb.....	16 @ 18
Turkeys, dressed, hens.....	18 @ 21
Turkeys, dressed, gobblers.....	18 @ 22
Hens, California, per dozen.....	5 00 @ 6 00
Roosters, old.....	4 50 @ 5 50
Roosters, young (full-grown).....	5 00 @ 6 10
Fryers.....	4 50 @ 5 50
Broilers, large.....	4 00 @ 5 00
Broilers, small to medium.....	3 00 @ 4 00
Ducks, old, per dozen.....	3 00 @ 4 50
Ducks, young, per dozen.....	4 50 @ 5 00
Geese, per pair.....	1 50 @ 2 00
Goslings, per pair.....	1 50 @ 2 00
Pigeons, old, per dozen.....	1 00 @ 1 25
Pigeons, young.....	1 75 @ 2 25

BUTTER.

Dealers generally agree that the butter market is weak—just why does not so easily appear, though country advices (elsewhere given) are of considerable poor stock, and large quantities of firkin, store and pickled roll from the East are announced to arrive soon, this market being said to be very free of those descriptions at present.

Commission merchants quote as returning for:	
Creamery, extras, per lb.....	31 @ 32
Creamery, firsts.....	30 @ 31
Dairy, select.....	29 @ 30
Dairy, firsts.....	27 @ 28
Dairy seconds.....	25 @ 26

EGGS

Have come down, as was expected by those who keep the run of seasons by fluctuations.

Commission merchants quote as returning for:	
California, select, large, white and fresh.....	38 @ 40
California, select, irregular color & size.....	32 1/2 @ 36
California, good to choice store.....	25 @ 30
Eastern.....	27 @ 28

CHEESE

Remains scarce and firm.	
Commission merchants quote as returning for:	
California, fancy flat, new.....	15 @ 16
California, good to choice.....	14 @ 14 1/2
California, "Young Americas".....	15 @ 16
Eastern.....	15 @ 17

HONEY AND BEESWAX.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.....	6 @ 6 1/2
Extracted, Light Amber.....	4 1/2 @ 5 1/2
Extracted, Amber.....	4 @ 4 1/2
White Comb, 1 lb frames.....	10 1/2 @ 11
Light Amber.....	9 @ 10
Dark Comb.....	5 @ 6 1/2
Beeswax, Good to choice, light, per lb.....	26 @ 27 1/2
Strictly fancy light.....	29 @ 30

HOPS.

All parties to the market—growers, dealers and brewers—are awaiting developments. The unsettling element in the market is the uncertain number of thousands of bales contracted at from 10c to 15c, some of which contracts run out this year, which can be sold for a good profit by dealers yet at less than present paying prices.

Buyers are paying for:	
Washington and Oregon.....	25 @ 26
Sacramento.....	24 @ 25

Russian River.....	24 1/2 @ 25
Sonoma.....	25 @ 27

WOOL.

Dealers' prices are:

FALL.	
Humboldt and Mendocino.....	12 @ 15
Mountain, free.....	10 @ 12
Plains, defective.....	7 @ 9

FRESH FRUITS.

Among the rather new features in apples in the market this week are Sonora Spitzenbergs from Abbott's ranch; White Winter Bellefleurs (which have several other names according to the locality in which they are grown), and Smith's Cider from Alviso, and the same variety Bellefleurs from El Dorado county. Grapes poorer in quality than in appearance, are disappearing slowly from the market; also strawberries and raspberries. In a general way 75c is the top of the market for grapes. Apples are rather lower. The market is dull.

Commission merchants are realizing for:

Apples, fancy, per 4-tier box.....	75 @ 1 25
Apples, good to choice, per 50-lb. box.....	50 @ 75
Apples, common to fair, per 50-lb. box.....	25 @ 50
Raspberries, per chest.....	5 50 @ 7 00
Grapes, Cornichon, per crate.....	50 @ 75
Grapes, Isabella, per crate.....	75 @ 1 25
Grapes, Black, per crate.....	35 @ 75
Grapes, Muscat, per crate.....	65 @ 85
Grapes, Tokay, per crate.....	75 @ 1 00
Grapes, Verdelis, per crate.....	50 @ 65
Grapes, large boxes.....	1 00 @ 1 75
Pears, Winter Nelis.....	1 00 @ 1 25
Pears, other kinds, per box.....	40 @ 75
Persimmons, per box or crate.....	50 @ 75
Pomegranates, per small box.....	50 @ 75
Quinces, per box.....	40 @ 60
Strawberries, Longworth, per chest.....	9 00 @ 11 00
Strawberries, Large, per chest.....	2 50 @ 4 00

DRIED FRUITS.

Jobbing quotations are:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, fancy.....	6 1/2 @ 7
Apples, standard to choice.....	4 1/2 @ 6
Apples, sun-dried.....	4 @ 4 1/2
Apricots, Moorpark.....	8 1/2 @ 13
Apricots, Royal, good to choice, per lb.....	5 1/2 @ 7
Apricots, Royal, fancy.....	7 1/2 @ 8
Figs, 10-lb. box.....	75 @ 1 15
Nectarines, per lb.....	4 1/2 @ 5 1/2
Peaches, unpeeled, fancy.....	6 @ 7 1/2
Peaches, unpeeled, choice.....	4 1/2 @ 5 1/2
Pears, halves.....	5 @ 9 1/2
Pears, quarters.....	3 1/2 @ 4 1/2
Plums, pitted.....	5 @ 6
Plums, unpitted, per lb.....	1 1/2 @ 2 1/2
Prunes, Silver, good to fancy.....	4 1/2 @ 7
Prunes, in bags, 4 sizes, 2 1/2 @ 2 3/4; 40-50s, 5 @ 5 1/2; 50-60s, 3 1/2 @ 3 3/4; 60-70s, 3 @ 3 1/4; 70-80s, 2 1/2 @ 2 3/4; 80-90s, 2 @ 2 1/4; 90-100s, 1 1/2 @ 1 1/2.	
Figs, White, in bulk.....	6 1/2 @ 7
Figs, Black, in sacks, per lb.....	4 1/2 @ 5 1/2

CITRUS FRUITS.

Oranges move slowly. Auction sales by the California Auction Co. are to commence Monday, December 15. A. Trost of Palermo, Butte county, has some notably well colored and ripe stock here, and Pogue Bros. of Lemon Cove, Tulare county, some seedless grape fruit.

Commission prices:

Oranges, Navels, fancy, per box.....	2 50 @ 3 25
Oranges, Navels, choice.....	1 50 @ 1 75
Oranges, Seedlings.....	1 25 @ 1 50
Tangerines, according to box size.....	60 @ 1 50
Jaffas.....	1 25 @ 1 50
Lemons—California, fancy, per box.....	2 00 @ 2 50
California, choice.....	1 25 @ 1 50
California, standard.....	1 00 @ 1 25
Limes, Mexican, per box.....	4 00 @ 4 50
Grape Fruit.....	2 25 @ 3 00

NUTS.

Jobbing prices are:

California Almonds, shelled.....	23 @ 26
California Almonds, paper shell, per lb.....	10 1/2 @ 11 1/2
California Almonds, soft shell.....	7 1/2 @ 9
California Almonds, hard shell.....	4 1/2 @ 5 1/2
Peanuts, California, fair to prime.....	4 1/2 @ 5 1/2
Peanuts, Eastern, band-picked.....	6 @ 6 1/2
Walnuts, soft shell, per lb.....	11 @ 13 1/2
Walnuts, standard, per lb.....	9 1/2 @ 11 1/2

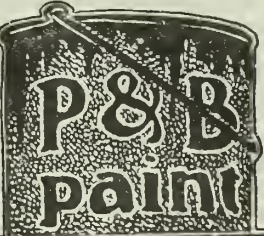
Produce Report.

Receipts of produce from California interior for week were:

Wheat, centals.....	149,779	Potatoes, sacks.....	47,203
Flour, sacks.....	134,782	Onions, sacks.....	3,088
Barley, centals.....	192,487	Wool, bales.....	587
Oats, centals.....	4,957	Broomcorn.....	45
Corn.....	3,400	Hops, bales.....	244
Rye.....	2,320	Alfalfa Seed.....	56
Buckwheat, sacks.....	1,288	Hides.....	4,866
Beans.....	21,320	Pelts.....	9,950
Hay, tons.....	1,830	Wine, gals.....	434,100

From Oregon:

Wheat.....	6,250	Barley.....	2,900
Flour.....	8,760	Potatoes.....	836
Oats.....	19,180	Wool.....	3



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is best

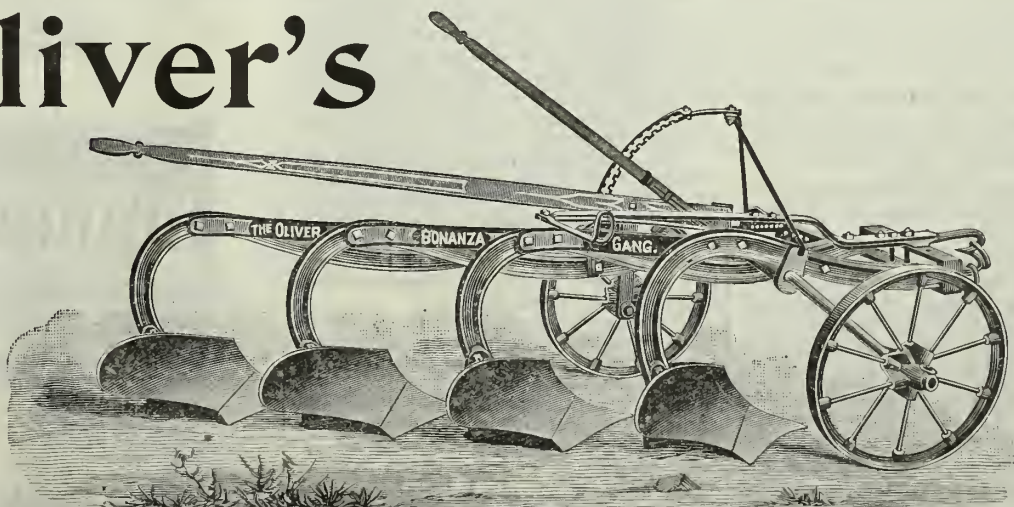
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FORESTRY.

The Forest Reservations Menaced.

By A. R. SPRAGUE, Manager of the Deciduous Fruit Exchange, in the Record Union.

A critical situation exists regarding the status of the proposed forest reservation including the drainage area of the headwaters of northern California streams. The Department of the Interior has temporarily withdrawn from sale and settlement a very large tract of mountain lands with the purpose of including them in an extension of forest reservation already existing; but very strong influences are at work to defeat this benevolent purpose of the Interior Department. Such withdrawal, if made permanent, will defeat the purpose of the great lumber companies who are seeking to acquire possession of these lands for the purpose of cutting off timber. Owing to the fact that the large lumber areas east of the Rocky mountains have been almost completely stripped of their timber, the lumber kings have moved to the Pacific coast, and by all manner of indirections are seeking to acquire possession of our mountain timber. This situation would cause no anxiety were it not that the evidence is very plain that these companies are using their great influence to secure the withdrawal of the order by the Interior Department. Important San Francisco papers are pleading their cause and they have also secured from the State Miners' Association a resolution to the same effect. Unless the people of the Sacramento valley most strongly indorse the Interior Department's order, there is great danger these lumbermen may be successful. Nothing can effect the great valley more profoundly for evil than the deforestation of the mountain slopes. Southern Europe presents many sad testimonies to the evils of such destruction of timber; great areas that once supported a teeming population are now absolutely barren, being covered with the debris brought down by mountain torrents, the slopes being robbed of the friendly protection afforded to the falling snow and rain. Even southern California, in the brief time afforded since its settlement, shows conclusively the destructive effect of denuding the drainage slopes. A small stream tributary to the San Gabriel river has two branches, one of which reaches a canyon whose slopes have been robbed of their covering of brush and timber by mountain fires before the forest reservation was established. The other reaches up a canyon whose brush and timber remain untouched by ax or fire. In the former case violent rainstorms bring down from bare slopes a great deluge with mud and rocks, which are strewn upon the plain below, converting to a desert area what was before fertile land; then, too, this stream dries up very early in the summer leaving no water to feed the summer flow. In the other canyon whose slopes remain untouched, the water flows clear throughout the winter and remains a generous stream all through the summer heats.

This, in a small way, illustrates the changes that would take place were the mountain slopes of California's northern streams robbed of their covering. Important climatic influences, too, would result from such cutting down of timber upon these slopes, and all for evil. Not one single beneficial influence could result from such destruction of timber. The work of the

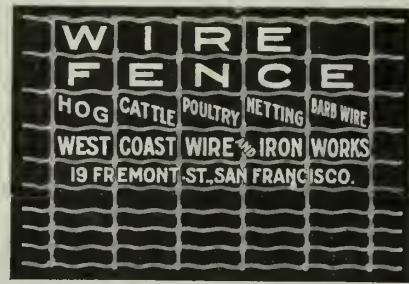
Interior Department as shown in forest reservations already established, makes it clear that in no other way can these areas be so well protected both from accidental fires and from encroachments of lumber companies. Doubtless some hardships will result to individuals from such extensions of the reservation, but the instances will be few, and if there are large areas of lumber from which timber may be removed without detriment to the districts adjacent, a proper method will be put in force by the department. Without such guardianship over these areas, hardly a generation will pass before the most lamentable results will follow. The resources afforded by the industrial advance during the last few years make it easy to accomplish in ten years what would have taken forty years a generation ago, so that if no restraining influence is exerted these forests will be devoured by the giant mills of these corporations within the lifetime of the present generation.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

CHICAGO's school teachers have joined the union. After a debate lasting over four hours before a crowded meeting, the Chicago Teachers' Federation voted to affiliate itself with the Chicago Federation of Labor.

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WASHINGTON expects an influx of lumbermen and lumber workers from Wisconsin.



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This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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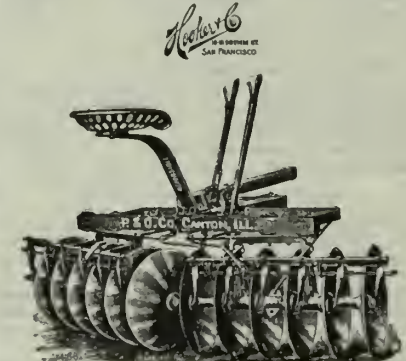


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THE FIELD.

Tobacco Growing in Sonoma County.

The first batch of tobacco at the Hermitage Tobacco Co.'s establishment is now undergoing the curing process at the company's plant in Cloverdale, and a full account of the enterprise is given in the Reveille: Nearly three tons of Havana and Sumatra leaf is in the curing room, where it will remain several weeks at a temperature slightly higher than 100°. The curing room has a capacity of thirty tons, but Mr. Ahrens concluded not to wait until more of the product is brought down from the plantation before starting fire in the big furnace, as there are many anxiously awaiting to see the tobacco after it is thoroughly cured and ready to be worked up by the manufacturer. When taken from the curing room it must age for a certain time. That product now in the curing room will be ready for use some time in April or May next. Wednesday morning at 9 o'clock the fire was started in the furnace and everything has been found to work satisfactorily. No trouble has been experienced in keeping the temperature at the right degree, the big room being as thoroughly air-tight and free from draughts as lumber and building paper can make it. On the lower floor Mr. Ahrens has a force of cigar makers at work to supply the excellent trade his goods have brought him.

The first crop of tent-grown tobacco runs about 180 leaves to the pound. In quality and texture it has been pronounced by experts as coming the nearest to that famous leaf grown in Havana. This is only the second year of growing tobacco under tents, and it has been demonstrated a profitable departure. At the Hermitage plantation ten acres were under canvas this year. California is the only State in the Union that has been able to grow the Sumatra leaf successfully—in fact, experts say the Sumatra seed produces a finer leaf here than in its native country. Heretofore \$8,000,000 has annually gone to Sumatra, but now that it has been proved beyond a doubt that the climatic and soil conditions are favorable in California it may reasonably be predicted that it will not be many years until this vast sum is not only kept in this country but that a goodly portion of it will go to the California producer.

The report of Prof. George Colby of the University of California, to whom samples of tobacco grown at Hermitage were sent, shows that the article contains as small a quantity of the alkaloid as is found in some of the typical tobaccos of the United States. The Hermitage tobacco, Sumatra leaf, contained 3.11% of nicotine in water-free substance; that from Sumatra, 2.38, while that grown at Berkeley contained 9.03%, or about three times the amount of that grown on the Russian river. The report on the Havana leaf was: From Hermitage, 2.63; from New York, 1.96; from Connecticut 3.35. This is considered an excellent showing.

This company has about 100 acres under cultivation, besides a number of farmers in this section have put out

small patches. While the industry is still in its infancy, yet there is good assurance it will soon become one of the leading ones of this section. The Hermitage Co. has invested a large amount of money in conducting experiments, but the days of experiments are over, and now they can safely say to the farmer that tobacco can be grown with such success in this locality that the profits to the grower will equal and perhaps excel any other industry they have heretofore engaged in. Many will next year grow tobacco on their ranches and will find a ready market for the product. The growers will be able to make contracts with the company at figures insuring them a good return for their labor. There is but one caution given them, and that is not to put out a greater acreage than they can properly care for. When the crop is gathered they must be barn or shed room in which to hang it up until ready for market. The grower should see to it that he has this room, as failure to provide cover at that time will result in loss.

HONESTY

has never been appreciated as it is at the present time. This being a fact, I look upon the success of my Health Tablets as evidence that honesty is what the people want. This remedy has been advertised very little, but the goods, being honestly made, have been recommended by people until the sales run into the millions. I have confidence in mankind as I have in my remedy, and I believe that if I treat you fairly you will treat me the same. I have taken chances in thousands of cases of dealing with people whom I trusted to their honor to pay me after they have been convinced that my remedy is all that I claim for it. I am now going to make the same liberal offer to you. Just drop me a postal card and I will send you a full size package of my Health Tablets and you need not pay for them until you are thoroughly satisfied that they are the best remedy you have ever tried, for the ailments for which I recommend them. It is a common saying: "Take Baldwin's Health Tablets to-night and you will be well to-morrow." It is true, so write me to-day and I will endeavor to send you the tablets to-morrow.

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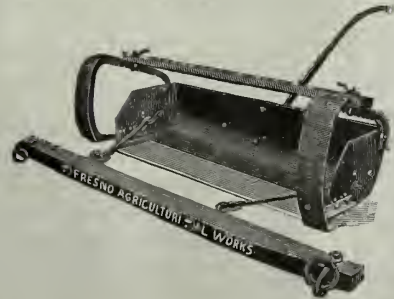


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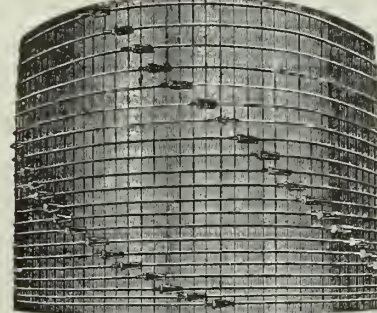
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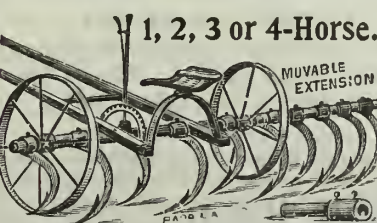


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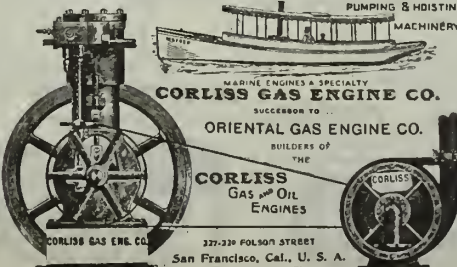
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Maltese Goats.

Consul J. H. Grout of Valletta, island of Malta, writes that he has recently received a number of letters from parties in the United States with reference to the Maltese goat. Probably in no country has the raising of fine milch goats been brought to such a degree of perfection as in these islands. Stringent local regulations require cleanliness in care and supervision on the part of veterinary surgeons. For its milk supply, the population of Malta—amounting now to very nearly 200,000 persons—relies almost wholly upon the goat. It has been estimated that there are 12,000 goats in these islands, but I think there are many more. There are two varieties, the short and the long haired. On the latter class, the hair is often 4 and 5 inches in length. In color, Maltese goats are red, white, brown and black. There are no regular grazing fields for goats, but every morning the herds are driven out along the roads and hill-sides, where they pick up whatever they can find in the way of weeds or any other acceptable edible, which, however, seldom comprises grass. This is supplemented by carob beans when the herd is driven back to shelter at night. How the Maltese goat can give the quality and the quantity of milk which it does upon this food is a matter of frequent speculation. An average goat produces four and one-half pints of milk per day, and sometimes as much as five pints. The height is about 2 feet 6 inches, while the weight will often reach nearly 100 pounds. The cost of a good milch goat in Malta varies from \$10 to \$25. There are a few cows upon the islands, but their milk is thin and watery, on account of feed being so costly. No special attempt seems to be made by the natives to preserve strains, but, nevertheless, the Maltese goat manages to keep up its reputation for looks and productiveness.

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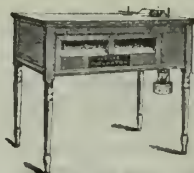
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FOR WEEK ENDING NOVEMBER 18, 1902.

- 713,910.—WIRE SPLICING MACHINE—J. Barron, S. F.
713,843.—SALESMAN'S LIFT—C. A. Bouck, Los Angeles, Cal.
713,951.—HYDRANT—C. L. Burkhart, Dayton, Wash.
713,949.—GRAFTING—J. B. Burrell, Wrights, Cal.
713,950.—GRAFTING—J. B. Burrell, Wrights, Cal.
713,750.—EXCAVATOR—W. Cole, S. F.
714,102.—CLOTHESLINE PROP—S. J. Day, Los Angeles, Cal.
713,628.—CHAIR FOOT REST—J. C. Garrett, S. F.
713,762.—TENNIS SET HOLDER—O. Haskell, San Rafael, Cal.
713,638.—PUZZLE—W. Hepfinger, Montesano, Wash.
713,775.—BOTTLE CONVEYOR—Kuehnrich & Laursen, Los Angeles, Cal.
714,001.—CLOTHES DRIER—F. S. McDougall, Seattle, Wash.
713,902.—OIL BURNER—J. H. Morrissey, S. F.
713,793.—EXPLOSIVE ENGINE—J. A. Ostenberg, San Jose, Cal.
713,799.—POULTRY FOUNTAIN—J. Reed, Berkeley, Cal.
714,038.—PROCESS—J. A. Russell, Tacoma, Wash.
714,016.—AMPERE-HOUR METER—W. A. Sherlock, S. F.
713,719.—HAND TRUCK—W. G. Tower, Corona, Cal.
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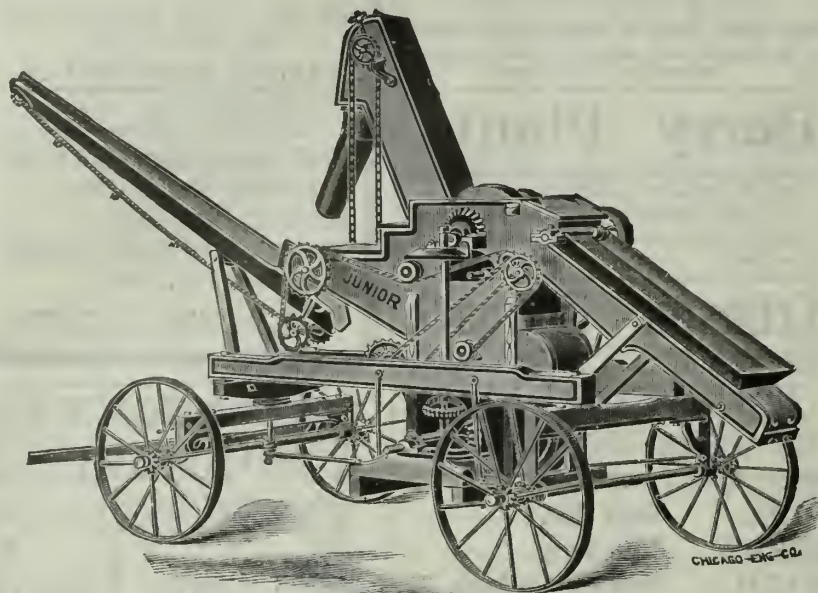
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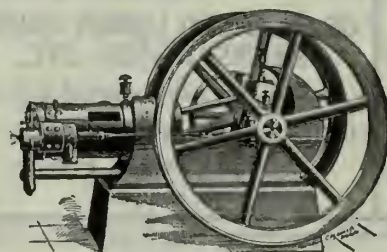
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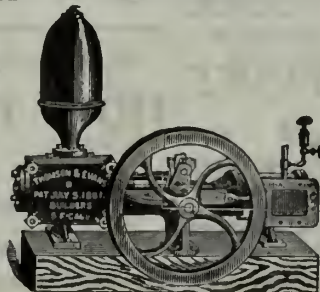
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PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 24.

SAN FRANCISCO, SATURDAY, DECEMBER 13, 1902.

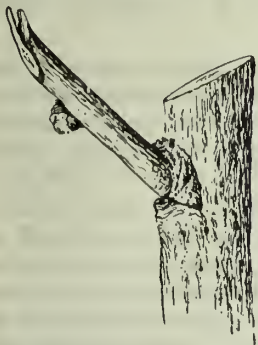
THIRTY-FIRST YEAR.
Office, 330 Market St.

The Peach Worm Pictured.

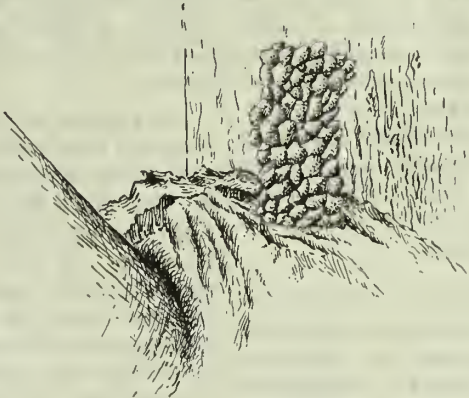
Our readers have already been generally informed of how the peach moth manages to worry itself through the year and how it has been demonstrated to be possible to almost stop its injuries by spraying with lime, salt and sulphur as late in the winter as it can be done without burning the opening buds. This has been demonstrated by Mr. W. T. Clarke in his special studies made last winter in Placer county

the magnifier, see how he becomes restless as the spring weather approaches and opens his burrow. This is the time to spray. Then take a look at the worm with a stronger magnifying glass. If he is not killed by the spray, he comes out of his burrow and wanders around seeking his breakfast, and bores into a young shoot which, when it feels his work, wilts its leaves and stops growth. After becoming fully grown, he comes out, finds a lot of curly bark and forms a cocoon in such shelter, and this cocoon

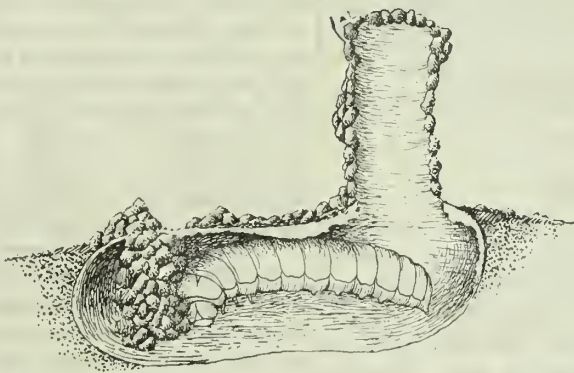
cess was not observed in any case to extend down the twig more than an inch, and the same worm would attack many twigs. Frequently, also, as in the first generation, the worm would merely bite into the twig a short distance and then withdraw, not having reached the pith. The worms act thus as "twig borers" for a period covering about twenty days, and then seek the fruit, if any is on the tree. If there is no fruit on the tree, then the whole life of the worm will be spent as a "twig borer," and the



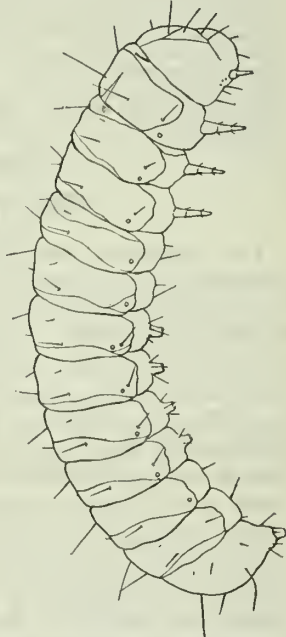
Twig showing winter burrow, natural size.



The same burrow, enlarged.



The same burrow laid open, showing worm beginning spring work.

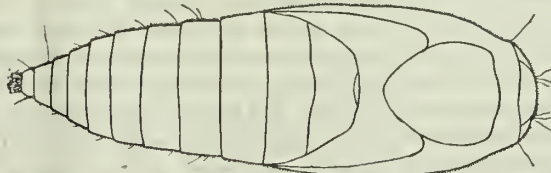
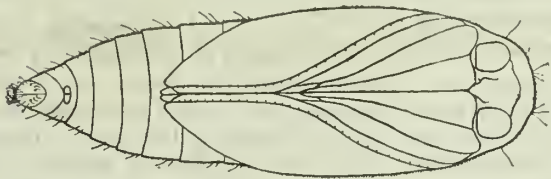


Worm greatly enlarged.



Section of twig, showing burrow of bud-worm.

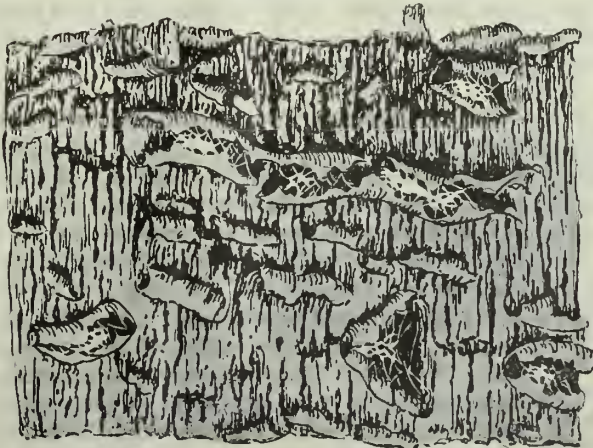
Wilting following attack of bud-worm.



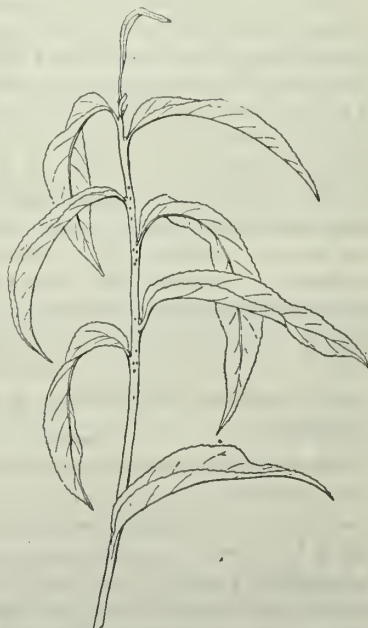
The pupa. Dorsal and ventral views.

Unsplayed peach orchard No. 13 Loss 40 to 50%	Unsplayed peach orchard No. 11 Loss 60 to 65%	Young peach orchard unsplayed All fruit wormy No. 14
To Loomis	Sprayed peach orchard Loss from 3 to 20% Station 1	Unsplayed peach orchard No. 12 Loss 50 to 55%
To Newcastle		

Loss caused by adjacent unsplayed orchard.



Pupation place and cocoon.



Eggs of later moth in position on twig.

The Life History of the Peach Worm Illustrated and Effect of Spraying.

under the auspices of the State University. His bulletin, which has just been published, gives the life history in very satisfactory details and all peach growers should have it. What we propose in this place is to give a few pictures from the bulletin which will show the busy man at a glance how the thing works, and why it can be best killed at just the time indicated. First see the base of the twig where the worm locates his winter burrow; then apply the magnifier and see how he raises a small chimney of refuse. Then cut open the burrow and, still using

shelters his pupa or resting stage. Both front and back views of this pupa are shown, much enlarged. After a short time in the pupa stage the moth appears and seeks places for egg laying. Mr. Clark shows that these eggs were generally placed in the new twigs near the bases of the leaves. In about ten days the new worms appear and would select a place a short distance from the tip of the twig and eat into it at the base of a leaf, bore into the pith, and then follow down the pith in the same manner as the first generation of worms did. This boring pro-

cess was not observed in any case to extend down the twig more than an inch, and the same worm would attack many twigs. Frequently, also, as in the first generation, the worm would merely bite into the twig a short distance and then withdraw, not having reached the pith. The worms act thus as "twig borers" for a period covering about twenty days, and then seek the fruit, if any is on the tree. If there is no fruit on the tree, then the whole life of the worm will be spent as a "twig borer," and the damage of this kind becomes all the more evident. This investigation shows that it is the worms which come from eggs laid early in May, attack the fruit early in June, while a later generation still comes from eggs laid on the stems of the fruit and the worms enter the fruit immediately after hatching and reach full growth. The moths from these worms lay the eggs from which the worms hatch, which take refuge in the bark burrows and thus reach the condition shown in the pictures with which our story began.

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E. J. WICKSON. Horticultural Editor

San Francisco, December 13, 1902.

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The Week.

Two rainstorms have covered the upper parts of the State since our last writing, but have not reached the south—unless the one now moving around the horizon reaches there. In the rain area the ground is rather wet for working in some localities, while at the south it has been too dry to work well. There is a glorious start of feed in the central and upper parts of the State and the live stock interests bid fair to have exceptional advantages. Early sown grain is also adding notably to the verdure of the winter landscape, and while the Mississippi valley had to endure a zero temperature last week, growing weather extended all through the California valleys and foothills. The holidays will have their customary environment of green and bloom.

Low ocean freights and low visible supplies of both wheat and barley in California naturally give a strong tone to the market and considerable buoyancy to futures. The Produce Exchange reports that on December 1 there was only about half as much wheat and barley on hand as upon the same date last year: rye and oats were even in less ratio, while beans are in excess of last year's figures. Bran is lower. Hay is still in short local supply for lack of cars and the price has advanced. Meats are quiet and steady, excepting hogs, which are in light receipt and firmer. Butter shows downward disposition and is weak, and cheese is less strong, while eggs are holding steady. Poultry is in good supply and fair strength. Potatoes and onions unchanged. The fresh fruit market is not notable, but dried fruits are strong, with much activity in prunes and raisins. Hops have settled down to quietness, but honey is restless under obvious scarcity of supplies. Wool is unchanged.

The Fruit Growers' Convention continued active and interesting until its close on Friday evening. The attention throughout was very good and by voting to have two conventions a year—one in the spring in southern California and one in the autumn in the central part of the State—the members showed their belief in the interest and value of the convocations. On Friday afternoon the assemblage visited the State University at Berkeley and many expressed themselves surprised at the extent and variety of opportunities for technical education provided. We have on other pages of this issue several important addresses which were made at the convention, and others are to follow.

Another item of legislation which is particularly interesting in view of the trouble the Sacramento river fruit growers have had with the commission merchants of this city this year, is the effort which will be made by Assemblyman Wright of Santa Clara county to remedy the defects in the law establishing

a free public market in San Francisco. The bill was passed creating such a market and leaving to the Harbor Commissioners the duty of setting apart the proper space on the water front for this purpose. Somehow or other this space was never designated, and it has been held that interested tradespeople had prevailed with the Commissioners to prevent their setting aside a space. But whatever the case, Assemblyman Wright has prepared a bill which specifically bounds and sets apart space for this free market, so there can be no evading it if it is enacted. The property designated is the blocks bounded by Pacific, Davis and East streets, and this space must be occupied by the free market after July 1, 1903.

Wheat from the northern regions of the coast is coming to San Francisco to enjoy the local activity and help out the short supply. A Portland dispatch last week says this unprecedented movement of wheat from that port to San Francisco continues, and another large cargo will be dispatched in a few days. The steamer San Mateo is working in this line, bringing down full cargoes of wheat.

Colorado has secured a decision in favor of her State law which prohibits the importation of cattle or other live stock into the State from points south of the thirty-sixth parallel of latitude between April and November unless they show clean bills of health. The law was attacked as unconstitutional and also as antagonistic to interstate commerce law and the animal industry law, but the United States court held the law to be in accordance with the right of the State to protect its own citizens.

The Water and Forest Convention in this city last week was fairly attended and actively occupied with preparations for enforcing its claims for enactment of new water laws and for funds for investigation upon the attention of the Legislature. An earnest effort toward these ends may be expected at Sacramento.

The Texas fever quarantine is to be lifted from a large area of the State. Dr. Blemer, State Veterinarian, has received news from Washington that beginning January 1st, cattle from Kern, Tulare, Kings, Fresno, Madera, Merced and Monterey counties will be permitted shipment to outside points provided they pass special inspection for contagious and infectious diseases. F. E. Twining, special inspector for Fresno county, says with reference to the provision for local inspection that the inspectors will probably be county inspectors and will have to be men on whom the Federal authorities can rely and who are satisfactory to those authorities. When a cattleman wishes to ship stock he will have to send word to the county inspector of that fact, and the inspection of the stock will then be made before the cattle can be shipped. Dr. Twining says that Fresno county is practically free from the disease, occurrence only being found in a narrow area, which will be locally quarantined.

THE California Supreme Court has rendered a decision which forbids a man to take subterranean water from beneath his land and sell at a distant point. The Court holds that the owner of land may develop artesian water on his premises for all purposes connected with the land—irrigation, power, pleasure and domestic use. Beyond this he cannot go if such additional development reduces the flow or quantity of water of his neighbors' wells. In other words, he cannot make a commercial commodity of water and sell it to the detriment of surrounding or adjacent land owners. The application seems to be, unless the lawyers can get another twist on it, that as part of the Riverside orange orchards are irrigated with water from wells located in San Bernardino county, it becomes a serious question whether this water will continue to flow in the ditches that have their beginning east of San Bernardino and their ending amid the orange groves of Riverside. It is said that millions of dollars are involved in this question. The fact that Riverside corporations own in fee simple, or have long leases of the water bearing lands, seems to cut very little figure, when the Supreme Court holds that water can not be taken from the land where produced, if such taking destroys or lessens the water-bearing capacity of neighboring lands, to the injury of the owners thereof.

QUERIES AND REPLIES.

Whitewash and Rabbits.

TO THE EDITOR:—Last spring I whitewashed a lot of year old apple trees and put salt in the whitewash to make it stick. The rabbits at once commenced to gnaw the bark of the trees, presumably for the salt, as they did not touch them before, and did not touch any other trees around that were not whitewashed. If you can I would like to have you give me a recipe for making whitewash containing some ingredient that will make it stick to the trees. In your book, "California Fruits and How to Grow Them," you give a formula for making whitewash including salt and tallow; but I do not know whether the tallow would repel the rabbits enough to overcome their liking for the salt or not. I would like to whitewash the trees at once to keep the sun off them while they are without leaves, and also to use something that will keep the rabbits away. Would it be a good plan to whitewash young trees as soon as they are set out, so as to keep them from sunburning, and would the buds start all right through a coat of whitewash containing ingredients that will be sure to make it adhere?—T. W. L., Littlerock, Los Angeles county.

TO THE EDITOR:—I have forty acres planted to young fruit trees. 12-inch protectors around the trees, but the rabbits are gnawing above the protectors. Will you please tell me the best known wash or spray to prevent further damage and the best way to apply it?—M. B. CARRINGTON, Fresno county.

The addition of the tallow to the whitewash, especially if it is old and malodorous, will have the effect of repelling rabbits just as any old rancid grease will do. If you could use any such ill-smelling grease with the whitewash it would make it sufficiently tenacious and would saponify the caustic lime, so that it could perhaps be safely used on new bark and dormant buds. It would, however, be essential not to use grease in excess of the amount which the lime would saponify, or this might be injurious to the young bark. An absolutely safe application for young and tender bark can be made by using one-quarter of a pound of whale oil soap to one gallon of water, dissolving the soap in hot water and then stirring in Spanish whiting until the mixture has the consistency of paint. This will keep the bark from sunburning and the whale oil will repel the rabbits, as they are very fastidious about biting anything which has an ill savor.

Improving Barley.

TO THE EDITOR:—I have some Chevalier seed barley from this year and some from last year, but last year's seed is the longest and best. Now if I mix the two together will they cross and improve or will it make any difference at all? If I take my seed barley and mix it with some other barley grown in a different part of the valley, would that be better than changing all the seed?—READER, Salinas.

Mixing the barley seed, as you suggest, would not have any appreciable influence on the product. Both years' seed will produce fine barley, providing the growing season this year is favorable, nor would you produce any effect by mixing any seed from another part of the valley with yours. If there is any advantage in changing seed it would be better to change it all. The result of crossing varieties does not appear immediately in the improvement of the whole product, but there may be occasional kernels which are improved, and to fix the improvement plants must be grown from these particular kernels and the best selected until you have enough of the new variety to sow a larger piece, and in that way get, after a while, a considerable quantity of the improved seed. Change for the better will not be manifested immediately on a large scale as you suggest.

Situations for the English Walnut.

TO THE EDITOR:—Will the English walnut thrive near Rincon, Riverside county? The soil is loose silt, bluish in color, which never bakes. The water is from 8 to 20 feet below the surface. I believe the soil is suitable, but is it too far from the coast and therefore too warm, or are there other objections with which I am not familiar?—READER, Riverside.

The distance from the coast mentioned would not of itself constitute unsuitability for this tree, for walnut trees are bearing in suitable soils and climate much farther from the coast than that. They are also doing very well in the interior heat of the San Joaquin valley and foothills, although the same variety which is largely grown near the coast often suffers from sunburn in the summer and from cutting

back of the new wood by frost in the winter. In such places the French varieties have been found more hardy and satisfactory. These varieties are also gaining in popularity, even in the southern coast district. It is dangerous, however, for a walnut tree to have standing water within 8 feet of the surface. It is generally calculated that the tree should have 12 or 15 feet of soil free from hardpan or water, and then, except in localities with heavy rainfall, be assured of its moisture supply by regular irrigation. Walnut trees are not satisfactory if the water supply is either excessive or deficient, and it is not wise to plant unless just the right degree of moisture can be assured. Die-back is common among trees unfavorably suited in this respect, and such trees are unprofitable. Even with water at 12 feet or so from the surface, the tree must have irrigation in order that the upper layer of the soil may be able to furnish to the roots the plant food which is necessary.

The Thanksgiving Citrus Fair.

The formalities of roman type and the dull monotony of black printers' ink can not give an adequate description of the citrus element of the fair. Only a colored picture—one or more—could do that. Of that element an abundance has been written elsewhere, and the PACIFIC RURAL PRESS has given voice to the satisfaction of the managers over the immediate practical results, which is the thing after all. But there were some other features in addition to the citrus which were of much value in catching the attention of the crowds and directing it to the main things.

Tulare county had the piece de resistance for exhibition in the end of the nave, and her exhibit, as an almost purely citrus exhibit, was equal in quantity and artisticness to her opportunity for display. One of the most attractive features of it was the orange-colored electric sign, "Tulare County," on the end wall just beyond and over the canopy-covered, immense basket in which the bulk of the citrus display was made, and around which other artistic features of it were laid out and surrounded with a low railing. Besides apples, persimmons and Japanese oranges with which the display was sprinkled, a notable feature of it was the large number of immense red pomegranates in both jars and a line at the base of the railing around the display like a border, most of them the product of the C. H. Claibes ranch at Porterville, on which it is said there are six or seven acres of the trees. Another striking feature was the limes in quantity used in the decorative figures, which were from the Lewis creek ranch of John Tuohy. In addition to its artistic display, Tulare county put up one of the large displays of oranges in boxes, packed ready for market. But the most valuable feature of the exhibit of Tulare county was the association of Porterville, Lindsay, Exeter and Lemon Cove in unity in the development of the citrus region of the county made evident by this exhibit.

Fresno county's display was, perhaps, the most extensive, with enough other exhibits in addition to the citrus to give a truthful idea of at least the fruit advantages and productions of the county. The thoroughly businesslike and comprehensive way in which it was made also helped to perfect the picture of the county. The beautiful size and color of the Red Emperor table grapes, from a woman's vineyard, mind you, made perfectly evident the truth of the story of \$13,000 receipts this year from a thirty-acre vineyard of them—over \$400 an acre. These, and Roeding's packed Calmyrna figs, Persian quinces, a great dried fruit exhibit in general, the kumquat (or little pear-shaped orange) tree in full bearing, and Roeding & Gower's olive oil, all helped to make a good exhibition of a great county.

Kern county's display was in one respect the direct antithesis of those of Tulare and Fresno. It possessed the artisticness of nature. That was all it seemed to need to make it attractive. The El Cajon oranges are of such a deep color as to attract attention anywhere without arrangement—a true orange color; while those from San Emidio are a fine contrast in yellow. The lemons raised in the county are superior ones, as one of the largest lemon buyers of the State, after thoroughly sampling them, testified by buying them during the fair. Kern was among those which showed oranges in boxes, ready for market. A notable advance attraction for the citrus show was a large pumpkin, with a trace of olive in its color, on which was a very good map of the county in black. Like Fresno, Kern makes strong use of collections of photographs in her presentations of herself. A 9-foot long stalk or bunch of alfalfa was also a part of the exhibit, and a very characteristic one for Kern county.

To some, especially those not resident of the State, the claims of Tulare, Butte and Placer counties as point of departure for the first oranges of this year to market seemed a trifle confusing and straining

upon belief; but Californians better informed, knew that the claims of Tulare and Butte were for first shipments in carload quantities to Eastern markets, and were both equally true, a car from each county having moved out the same day, while the claim of Placer county, or, more exactly speaking, J. Parker Whitney of that county, was for first shipments in express lots to any market, in this case San Francisco, which was also a perfectly truthful claim. Besides a good display of well-ripened oranges loose and in boxes, and other citrus fruits, mostly from Mr. Whitney, the Placer county display was rendered attractive by a growing tea bush, looking as much like a little oak as anything else indigenous in California.

The notable extra feature connected with Sacramento county's excellent exhibit of citrus fruits, largely from Orangevale and Fair Oaks sections, was a large branch from a thirty-year-old nutmeg tree standing on the Margaret Crocker Home place in Sacramento city, the branch bearing well-developed nuts yet in their dark green shells. The tree is a variety of fir with foliage very similar to that of the variety in that family from which lumber is made, and this particular tree on the Crocker Home place is said to be 25 or 30 feet high. "Nutmeg" trees do not bear until they are fourteen years old. This county also showed a growing olive tree with fruit.

In Yolo county's citrus exhibit, as a notable feature of it, were five mammoth pomelos on one small branch, raised by H. S. Dunlop; and in addition to the exhibit were some extra large, sound-looking turnips from E. A. Dopking of Woodland, and Seedless Sultan and Thompson raisins, in the production of which Yolo county stands at the head. T. D. Morrin showed some excellent and mammoth-sized lemons, to the production of which the mountain-surrounded, sheltered valley in the northwest corner of the county seems particularly well adapted.

San Joaquin county's exhibit was mostly deciduous. Its first-appearing attractions were the delicately artistic bower in which the exhibit was ensconced and the equally artistic sign which hung over and back of it, made of seeds and nut meats largely, and showing "San Joaquin" county in the midst of the sunrise—the work of the jolliest of all the county managers, F. J. Dietrich. Unlike most, if not all, of her sister counties, it could be and was said of San Joaquin that what oranges and other citrus fruits it did show were grown without irrigation, and it was good, well-ripened, sweet fruit. In the additional, or deciduous fruits, etc., features were some mammoth walnuts, French, not English, grown also without irrigation, it was said, by E. H. Fine of Linden; genuine Italian chestnuts, grown by D. Fugazzi on Rough and Ready island, where he has a small grove, the product of which this year is reported sold at 27c per pound; and thirty-five varieties of vegetable seeds grown by the Cox Seed Co. in San Joaquin county.

The growing orange tree in a tub, seventeen months old in the field, and with two dozen and originally more large oranges on it, taken from the place of C. F. Foster, one of the original owners and promoters of Maywood colonies, was ocular demonstration of characteristics which attach to nearly all fruit trees in that region of Tehama county, as also in Placer: the earliness of fruit production and large amount of fruit to small amount of seemingly hardy wood.

Colusa added to its citrus exhibit the diploma which it received over all competitors for citrus fruit production at the Midwinter Fair in San Francisco in 1894, given, it is claimed, largely on account of the excellent flavor of the fruit; flowers from the Woman's Improvement Club of Colusa; a 167-pound flat-round pumpkin raised by Ah Lum; some notably large (American White) almonds raised by A. A. Thayer of Grimes; Zante currants (the real thing) raised by J. W. Brim of Williams; broomcorn from E. W. Jones & Co., Colusa; spring salt from Peter Peterson of Sites; and samples of 10,000 sacks of brewing barley such as grain raisers are proud of.

Mendocino county, to a good display of citrus fruit produced in it, added an equally good display of its apples.

One riding through Yuba county by rail, through what is mainly a wheat growing region, evidently gets a false idea of it as to the variety of its productions.

It takes such exhibits as that at this fair in the Ferry Building, and such abundantly truthful articles as that of Caroline M. Olney in the last Overland Monthly, to bring out this variety. Yuba county showed a well-sized bunch of home-grown bananas.

"Butte County," in green, was very prettily enwreathed in the almost solid bank of citrus fruit, slightly decorated with olive oil in bottles, exhibited by that county. Butte county's display was of a character that will make it linger long, with growing distinctness and effect, in the mind. The large exhibit of the Ehman Olive Co., near, really became a part of that of Butte county, and properly so. The growing orange tree from the place of Moses La Point of Biggs was a strong competitor with that from Tehama county, and worthily represented a section that this year enters the citrus fruit shipping field in carload lots for the first time.

Rieger's perfumes, from their booth, made the air fragrant; while the exhibits of wines by the Italian-

Swiss Colony, I. de Turk, Schramberg Vineyard of Napa, Witter Springs' water, Hoyt's "propless" prop for trees; of P. Barry pears, grown in San Francisco, and flowers from the ladies of Maywood and from Golden Gate Park, all helped to show what this State can do in other lines than citrus, even in San Francisco. Pomelos (grape fruit), persimmons and olive oil were features of the displays of nearly, if not quite, all the counties.

At the close of the fair, Morton Lindley for Shasta, E. M. Wager for Mendocino, Robert Hector for Placer, F. E. Wright for Colusa, Glenn and Tehama, T. D. Morrin for Yolo, Hugh McGuire for Yuba, A. S. Riehl for Butte, Wm. D. Nichols for Sacramento, F. J. Dietrich for San Joaquin, B. R. Walker for Fresno, J. W. Davis for Tulare and Ben L. Brundage for Kern, as managers for their respective county exhibits, tendered a complimentary testimonial to J. A. Filcher of the State Board of Trade for his excellent general management of the exhibit.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 8, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

Warmer weather prevailed during the week, and no injurious frosts occurred. Light rain fell in all sections, benefiting growing crops and grass. The soil is in good condition, and considerable progress was made in plowing and seeding. Early sown grain continues thrifty and is making good growth. There will probably be a large acreage of wheat, barley and oats. Pasture is plentiful and stock are in good condition. Large shipments of oranges are being made. It is reported that the heavy frosts during the latter part of November seriously damaged olives in some sections, and that the crop for pickling will be light.

COAST AND BAY SECTIONS.

The weather was considerably warmer than during the preceding week, but light frosts occurred in some sections Wednesday morning. Light rain fell in the central and northern districts toward the close of the week. Grain and grass were benefited by the warm weather, and are making good growth. Plowing and seeding are in progress in all sections except on the low lands, where the soil is too wet for cultivation. Pasture is plentiful and stock are in good condition. Beet harvest is nearly completed at Salinas. Citrus fruits are thrifty.

SAN JOAQUIN VALLEY.

Generally fair weather prevailed during the past week except on Friday and Saturday, when it was cloudy, with light showers in some sections Friday night. The light rain was beneficial to growing crops. Frosts occurred frequently during the early part of the week, but no damage resulted. In some sections grapes are still being shipped to the wineries. Plowing and seeding are progressing rapidly, and in some sections most of the plowing has been done. Early sown grain and green feed are making good progress, but more rain would be beneficial to both crops. Orange picking and packing are progressing. A large crop of alfalfa will be sown in some localities. Stock of all kinds are reported healthy and strong.

SOUTHERN CALIFORNIA.

Cool, dry weather during the week retarded the growth of grass and dried the soil to such an extent that plowing was suspended in some places. Heavy dews in San Diego county greatly retarded raisin curing, and a considerable portion of the crop is still on the trays. Oranges are now coloring rapidly, and heavy shipments are being made for the eastern holiday markets. Shipments of green tomatoes from Orange county continue. Pasture is plentiful in most places, and stock are in good condition. Frosts occurred in some sections, but no serious damage was reported.

EUREKA SUMMARY.—Weather conditions during the greater portion of the week were unfavorable for farm work. Some plowing was done the first of the week, but low lands remain too wet for cultivation. Pasture is good.

LOS ANGELES SUMMARY.—The weather is getting dry for feed, plowing and early sown grain; rain needed soon, though conditions are still fair in some sections, where work continues. Cool weather retards growth of vegetation.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 10, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the Week.	Minimum Temperature for the Week.
Eureka.....	4.43	18.17	15.02	12.61	66	38
Red Bluff.....	.64	11.67	9.68	6.94	58	40
Sacramento.....	.80	4.51	6.04	4.05	66	46
San Francisco.....	1.01	4.70	5.80	7.12	62	46
Fresno.....	T	2.66	2.17	5.43	70	36
Independence.....	T	.79	1.35	1.51	58	24
San Luis Obispo.....	.00	3.78	3.78	4.25	74	34
Los Angeles.....	.00	2.45	2.45	3.95	80	44
San Diego.....	.00	2.50	2.50	1.87	74	46
Yuma.....	.00	.71	.22	1.43	74	36

HORTICULTURE.

The Apple Industry of California.

By C. H. RODGERS, President of Pajaro Valley Orchardists' Association, at the State Fruit Growers' Convention.

From the high Sierras across the hot, dry interior valleys to the sea, in every county in our State, we find the apple growing and maturing its fruit.

Though of all the fruits, adapting itself to the widest range of latitude and conditions, it attains its highest degree of perfection only under certain surroundings.

REQUIREMENTS OF THE APPLE.—This fruit delights in a deep, rich soil and a cool climate. These conditions are absolutely necessary for success in raising the most profitable kinds—the winter varieties. Such combinations of soil and climate are found mainly in the coast counties and in the mountains of our State.

The climate of a belt of the whole western slope of the Sierras is well adapted to the growth of the apple, particularly the varieties Baldwin, Spitzenburg, Hoover, Ben Davis, Winesap and Greening. This belt varies somewhat according to latitude. On the north it might be given in general as ranging between 1500 and 3500 feet above sea level and gradually increasing in latitude southward until the limit is between 2000 and 4000 feet, while in the mountains of the extreme southern part of the State the best apples are produced at an elevation of between 4000 and 5000 feet. The favorite varieties in the last-named section are the Duchess, Jonathan, Greening and Bellefleur.

In the coast counties some of the finest apple orchards are located within a short distance of the ocean and at an elevation of but a few feet, and while along the coast choicest red varieties—Spitzenburg, Jonathan and others—may be raised as high as 3500 feet, on account of climatic variations, the limit at which any variety can be depended upon to yield a full yearly crop is about 2000 feet above the sea, and yellow varieties, as Newtown Pippin, Bellefleur, White Winter Pearmain, are not profitably grown above an elevation of 300 to 500 feet, because of the prevalence of apple scab and other fungi.

HISTORICAL.—The history of the apple in California began with the founding of the Missions. The few that were planted were seedlings and proved of such inferior quality that this fruit was not propagated to any extent. The "rancheros" gave but slight attention to the planting of apples, or, in fact, to any other fruit, although one of the stipulations under which a land grant was obtained required that fruit should be planted.

It was not until after the settlement of the State by Americans that the apple received its just consideration. In the early '50s small plantings of this fruit were made in widely scattered localities of the State. As the plantings were mainly experimental, it was the rule to set out many varieties. The result was that in a few years it was demonstrated which localities were best adapted to this fruit, and also the varieties most suitable to the peculiarities of the different districts.

It soon became apparent that the extensive planting of early or summer varieties would not prove profitable, as they ripened at a time when other fruits were plentiful.

The climate of the hot interior valleys did not prove conducive to best results with the late winter apples. For these reasons the planting of commercial orchards was confined mainly to a few of the more favored localities where late varieties flourished best. Some of the bay counties proved well fitted both in soil and climate to the requirements of the favored varieties, and in these counties the industry mainly centered.

Santa Clara county led in acreage and production. The magnitude to which the industry had attained in this county may be imagined when at one period during the late '70s the assessor's returns showed over 1,000,000 trees.

Prices ruled high in those days. From \$2 to \$4 per box was not out of the ordinary for choice apples late in winter. The industry continued to be the source of great profit until the appearance almost simultaneously of two of the worst pests that the apple grower has had to contend with—the codlin moth and the pernicious (commonly called San Jose) scale. The first named appeared in our State in 1874 and the latter in 1873.

Partly through apathy on the part of the grower and partly through ignorance of the best methods of combating these pests, such havoc was created that by 1880 the industry was practically abandoned in what had been the foremost districts in the State.

Stimulated by the demand and high prices consequent upon the curtailed output, other apple sections whose climatic conditions were not so favorable to the increase of these pests rapidly came to the front in increase and output.

APPLE COUNTIES.—Santa Cruz county took the lead and still is the leading apple producing county, with 688,000 trees. Monterey county is second in acreage, with 380,000 trees. While in both these counties only

about one-third of the trees have reached full bearing, their combined yield last season amounted to 1,700,000 boxes.

Sonoma county ranks second in production, but not in shipment of apples. No definite figures could be secured, but an approximate estimate places the yield of this county at 750,000 boxes, only 100,000 of which are shipped green. The balance is dried, and the estimate places the dried product at upwards of 1800 tons. The apples principally raised in Sonoma are Gravenstein, Baldwin, Spitzenburg and Newtown Pippin.

The other prominent apple-shipping counties are Humboldt, with an approximate crop of 150,000 boxes; Santa Barbara, yielding 50,000 boxes, and San Diego, yielding 25,000 boxes. The product of other sections finds sale mainly in nearby markets.

THE MARKETS.—Markets for export apples are found in other States of our Union, in Mexico, several of the European countries, Australia, and, to a slight degree, the countries of eastern Asia.

With liberal treaties and trade relations which would confer reciprocal advantages, a promising field for the sale of our apples and other fruits could readily be developed in the Orient, particularly in China. This would apply especially to the smaller sizes of the various fruits which are so difficult to dispose of in our present markets.

Apples of the Pacific coast are marketed in pine boxes measuring 10x11x22 inches, and, when filled, weigh about fifty pounds. For export each apple is neatly wrapped in paper.

The grade is determined according to the number of rows or tiers required to fill the end of a box. The grades are known as 3, 3½, 4, 4½ and 5-tier. The 4-tier is in greatest demand for export trade, and prices are generally quoted on a 4-tier basis. The size of this grade ranges from 2½ to 2¾ inches in diameter. There is but limited demand for extra large sizes, and price of the 4½ and 5-tier rule low.

LABOR QUESTION.—As with all other branches of the fruit business in the State, this industry is confronted by a most serious problem—that of labor. Every encouragement has been held out to Eastern labor by the fruit growers of the State, aided by the railroad companies, but without success. Thousands of tons of choicest fruit have rotted on the ground during the last few years, owing to scarcity of laborers. This being the case, how lamentable is the outlook for the future!

The ratio of increase of fruit production will in the immediate future far outstrip the ratio of any possible increase of white labor. With these facts before us, what recourse have we in our dilemma? As in other emergencies we are forced to shift our position and face about to meet unforeseen conditions; this axiom is markedly exemplified in the present attitude of the fruit growers of this State on the question of Chinese immigration. It is the sentiment of a large majority of the fruit growers of the State that our shortage of white labor can best be supplemented by Chinese. While our fruit growers would assuredly oppose the unrestricted immigration of Chinese or other alien labor, still they feel that, without doing injustice to the interest of American labor, a limited number of this class of laborers should be admitted from time to time, according to the needs of the State. Such innovation upon our present exclusion laws would, of course, have to be surrounded with the most rigid regulations.

Failing this relief, shall we not in the future be compelled, as we have recently, to witness the degrading spectacle of our wives, mothers and daughters being forced to engage in labor that every right-minded American feels should be done by the male sex only?

PAJARO VALLEY.—The leading apple district of the State is Pajaro valley, two-thirds of which is located in Santa Cruz county and the balance in Monterey county. Its chief shipping point is Watsonville, located on the line of the S. P. Railroad. As this valley produces for export far more apples than all other districts in the State combined, a short description of it might be of interest.

Opening out open the ocean, insuring coolness of climate, an annual rainfall averaging 20 inches, together with the water table ranging from 10 to 20 feet from the surface, insuring sufficient soil moisture, a soil of great depth and unusual fertility, nature has by this unparalleled combination of favorable conditions especially fitted this valley for the highest development of the apple.

The magnitude of the industry in Pajaro valley can be realized when it is stated that it and its tributary canyons contain 862,000 apple trees, and produced last year 1,500,000 boxes, the returns from which brought over \$1,000,000 into the town of Watsonville. It must not be inferred that all this amount was shipped in the green state. Large quantities of the inferior grades were converted into the dried product and into cider, vinegar, jellies, jams, etc.

The dried product alone this season will amount to about 900,000 pounds. As but one-third of the trees are in full bearing, with the present rate of increase, this valley within the next decade will produce 5,000,000 boxes annually.

While in Pajaro valley the widest range of varieties of best quality are produced, among which are Early Harvest, June, Astrachan, Gravenstein, Fall

Pippin, Skinner's Seedling, Rambo, Jonathan, Langford Seedling, Winesap, Lawver, Missouri Pippin, Smith Cider, Red Pearmain, White Winter Pearmain and many others, the principal kinds grown and the only varieties that are being planted at present for commercial purposes are the Newtown Pippin and Bellefleur. The great demand for these two varieties is due to their superiority and also because they can be profitably grown in a few limited sections of the world.

Of the 862,000 apple trees in the valley, approximately 400,000 are Newtown Pippins and 250,000 are Bellefleurs.

The red varieties are neglected because of their coming into direct competition with Eastern apples.

The crop heretofore has been handled mainly by dealers, who pay the orchardists a "lump" sum, ranging from \$100 to \$200 per acre, for the fruit on the trees; but as the orchardists have become convinced that this method of selling is working an injury to our industry, the present tendency on the part of the growers is to pack their own fruit or have it packed by reliable firms.

TRANSPORTATION.—The apple business, along with other branches of the fruit industry of our State, suffers hardship through excessive freight charges. Our railroads exact for one week's haul more than the orchardist receives for the same amount of fruit, and which it requires a whole year to produce. However, in justice to the railroad authorities, it should be said that they now realize the moderation of our demand for lower freight rates and, as a beginning, have reduced the rate on apples from Watsonville to the Mississippi river points from \$1.05½ to 85 cents per 100 pounds—a favor which our apple growers and shippers appreciate and are truly thankful for. While no concessions have been made on rates to extreme Eastern points, we believe a reduction will be granted in the near future. The present rates are excessive at \$1.05½ per 100 pounds to points east of Chicago, and at \$1.35 to some points in Arizona and New Mexico.

The best grades of Pajaro valley apples, after being packed, are mainly bought by outside dealers for Eastern and European markets at prices ranging from 75 cents to \$1.10 per 4-tier box f. o. b. cars at Watsonville. The inferior grades are placed on the markets of this State or are converted into the by-products already enumerated.

INSECT PESTS.—The apple in this district is remarkably free from disease and failure of crop is unknown.

As to insect pests, the codlin moth here, as in all apple-growing sections, is the cause of the greatest loss to the orchardist. The woolly aphis ranks second in damage wrought. Of the two leading varieties of trees grown, it attacks and causes greatest damage to the root of the Newtown Pippin and to the limbs of the Bellefleur. A number of beneficial insects aid in keeping this pest in check, but their natural increase is not sufficient to control it. Ladybugs lead the list, and the varieties Hippodamia convergens and Hippodamia ambigua feed on the woolly aphis almost exclusively during the summer months. As these ladybugs are found in great numbers in some parts of the State and are easily procured, the Pajaro Valley Orchardists' Association this season, upon recommendation of the Horticultural Commissioners, brought in and distributed through the orchards upwards of 1,250,000 of these insects. They performed the work in an entirely satisfactory manner.

Nurserymen have been slow to adopt the plan of propagating trees on roots resistant to the woolly aphis, but such stock is now being offered at our local nurseries.

Pernicious, or San Jose, scale, although never a serious pest in Pajaro, through vigorous action on the part of the Horticultural Commissioners, has been practically exterminated.

The codlin moth has baffled all efforts to keep it under control. Orchardists, after having been imposed upon repeatedly by dishonest manufacturers and wholesale dealers in Paris green, have become suspicious of all brands of Paris green on the market, and have shown a lukewarmness in its further use.

Last year, exasperated by the continued fraudulent impositions practiced upon them, the Orchardists' Association of Pajaro valley filed a complaint with the State Board of Horticulture against two of the leading wholesale druggists of San Francisco, charging them with selling unlawful Paris green. The State Board of Horticulture, in pursuance of the law, filed complaint with the Attorney General. This official, whose duty it is to prosecute such cases, relegated the complaint to some musty niche in his office, or, perchance, to the wastebasket.

AN APPEAL TO THE UNIVERSITY.—The loss through the codlin moth has been to such an extent this season that the Orchardists' Association has appealed to the agricultural department of the University of California for expert investigation, and, as a result of this request, the University authorities have kindly consented to detail a specialist next season for the purpose of determining the best methods of combating the pest in this particular locality.

In conclusion, while definite figures could not be obtained, an approximate based upon the data col-

lected gives the State 2,500,000 apple trees, yielding 3,250,000 boxes, about 60% of which is marketed green; 30% is dried, and this product amounts to 5,000,000 pounds. The remaining 10% is converted into cider, vinegar, jellies, jams, etc.

Though little is said or written about the apple industry of this State, and although it is not of equal magnitude with some branches of the fruit industry, yet it is not of least importance, and swells the grand total of California's fruit returns to the extent of upwards of \$2,000,000 annually.

FRUIT PRESERVATION.

The California Fruit Grower and the Labor Supply.

By H. P. STABLER of Yuba City at the Fruit Growers' Convention.

Labor is the problem of the twentieth century. To-day a Presidential commission is striving to arbitrate the differences between 147,000 working-men and the owners of the Eastern coal fields. A careful study of the proceedings of the inquiry, as promulgated by the daily papers, the weekly journals, and the monthly reviews, will be of interest to the California fruit grower. Labor is the greatest factor of expense in any industrial enterprise, and this is particularly true of the fruit business of California. In order to successfully operate the orchards and vineyards there must be at hand an adequate supply of efficient labor. During the past four years this supply of help has not always been adequate nor has it always been efficient. The unprecedented scarcity of orchard help during the past season has been noted in every fruit district of the State. Even an advance of 25% and 50%, and in some instances 100% in the price of labor has not been sufficient to secure the necessary help to harvest the crops. Tons upon tons of fruit have been lost to the producers from this cause. Nor has the orchardist alone been the sufferer, grain and hay farmers have felt the need of help. Hop growers have found it necessary to advertise liberally for pickers, and have held out unusual inducements in the way of wages, camping facilities, etc. Dairy men have in some instances been under the necessity of turning their cows into pasture for the want of milkers. Kitchen help is almost beyond the reach of the average grower, and it is not unusual for the cook to be the best paid man on the ranch. Increased acreage and increasing tonnage are largely responsible for the short supply of men. New fruit districts are annually coming into bearing, canning establishments are increasing their output, while dried fruit packers are annually developing and extending their plants.

Further illustrations of the conditions that confront us would be useless. Suffice it to say that we fruit growers of California realize that measures to relieve the present scarcity of labor must be taken before the approach of another crop. "The harvest truly is great, but the laborers are few." An essay on the labor supply is necessarily not an exhaustive treatise. Your patience and my ability will not permit an historical review of the question from the beginning of the fruit industry of the State. Nor is this necessary for our present purpose. You are practical men. You have a problem to solve and it is my purpose to offer a solution if possible.

THE OLD TIME.—In passing I will state, then, when the growing of fruits, both deciduous and citrus, began to occupy the attention of Californians there were present among us many Chinese. Orchardists freely availed themselves of the services of the Chinaman until the operation of the Exclusion Law prevented his immigration into the United States. Emigration, death and other causes, have so reduced his numbers that he is hardly a factor in the labor problem of the fruit grower. By boarding and lodging himself the Chinaman relieved the grower of the responsibility of maintaining a boarding-house on his premises, and growers advocated his employment. Whether or not Chinese exclusion has been a benefit to the horticultural interests of California is a mooted question among fruit growers. However, we must meet conditions as they exist, and in casting about for increased supply of labor for next season the Chinaman is not to be considered.

THE JAPANESE.—After the advent of the Chinese our shores were invaded by hordes of "little brown men." The Japanese were advocated by many as satisfactory laborers for orchards. The Jap also boarded and lodged himself and his employment was considered a convenience by fruit and grape growers. But while the Chinaman had many faults, and was never an ideal workman, the Jap was worse. Surely if Bret Harte had known the Jap in pioneer days, as he knew the Chinaman, he would have found the "little brown man" much more "peculiar" in the matter of "vain tricks" and "dark ways." But why go on? You knew the Chinaman. You know the Jap. There undoubtedly were many reliable, efficient Chinamen employed in orchards and vineyards; possibly there are some honest, faithful, industrious Japs who will not break their contracts in the height of the fruit season and leave you with your product rotting on the ground, who will work for your interests and

not loaf on the job, who will not "lay off" when work is rushing and demand that employment be provided when there is a cessation of activities for a day or two. I say there may be some Japs of the character and description indicated. If there are any I would be obliged if the information might be wired to me, charges collect, since it has never been my good fortune to see or hear of any Japs of that class.

However, the Japanese are here in goodly numbers while more are coming, thus allowing growers who appreciate that labor to secure a supply for the coming season. Chinese and Japanese as laborers have their advocates, and there are some arguments to be advanced in favor of their employment, but they are not ideal as workers in our industry. Their lack of intelligence, their lack of interest in the welfare of our business, besides numerous other arguments, might be cited to prove that their employment is not essential to the best success of fruit growing.

EUROPEANS.—Of Armenians, Italians, Portuguese, Slavonians, Russian Finns and other nationalities located in various parts of the commonwealth of California I can only say that they are approved and disapproved by those who employ them. Comparatively small numbers of them reside in my district and I am therefore unable to advise.

THE BEST LABOR.—It is an axiom of industry the best workers are born on the soil. The young men and young women of California are the best assistants a fruit grower can find to help him carry on his enterprise. An intelligent, thrifty, energetic, steady, young white man who was raised on a farm can do more work than any laborer a fruit grower can secure, but, unfortunately, the supply is not equal to the demand. Energy, thrift and steady habits are not always characteristic of the white worker. In fact, the white man of California who seeks employment in the orchards and vineyards may be divided into two classes, viz., the genus "hobo" and the genus "homo." The genus "hobo" can be disposed of in a few words. Improvident and dissipated, though generally intelligent, he comes to you and works as well as the average hand for from five to seven days, when he politely asks you to give him his "time," and, with a jaunty air, swings himself up to the seat of your already overloaded fruit wagon and rides to town, there to enjoy himself until, moneyless and hungry, he repeats the performance. He is, therefore, impossible as an orchard "hand."

PRACTICAL KNOWLEDGE.—The young man born on the soil and raised on a farm is our mainstay and reliance. His familiarity of the ways of the country, with the methods of business, the use of horses and agricultural implements, and the important fact that he is acquainted with manual labor, make him the ideal employe in an orchard. In the last qualification he has an advantage over the city boy and the clerk. They occasionally seek work in the country, but as a rule they are impracticable and come to you without being grounded in the rudiments essential to employment in fruit growing. It is true they are intelligent and can learn, but you are under the disadvantage of having them learn on "your time." Many city boys are however, earnest and willing and often prove a boon to the orchardist in seasons of great scarcity of help.

HELP FROM THE EAST.—A shortage in the home supply compels us to ask the farmer lads of the agricultural districts of the Eastern States to come to California to better their conditions by employment in our orchards and vineyards. We can offer them, besides a new country with a mild climate, the certainty of earning good wages and the opportunity of learning an interesting business, and a business that their previous training has eminently fitted them for. It were selfish of us to expect them to accept of our offer of employment if the only inducement held out was the dollar a day and board usually paid orchard workers. The further fact that after two or three years spent in an orchard or vineyard will fit the earnest and energetic young men for places as foremen at better wages, at salaries equal to men in similar capacities in commercial houses, will induce many of them to come to California.

Sufficient help for curing fruit, for canning and packing, if not to be found among the young women at home, must also be obtained from the East. Heads of families in farming districts must also be urged to look to the Pacific coast for better conditions. The most prosperous fruit growers in California are the men with industrious families, living on small orchards of from ten to twenty acres. The family performs all the labor of an orchard or vineyard of that size, and the very fact of the scarcity of labor here affords the family the opportunity of earning good wages in the more extensive orchards in the vicinity. The larger orchards of California are not as profitable proportionately as the smaller holdings, from the greater expense involved in the larger operations, the present scarcity of labor and the inevitable waste. Unless an improvement in labor conditions is brought about, many large tracts must be cut up into smaller places, and thrifty families will be supported thereon.

ORGANIZED EFFORT FOR HELP.—The best prospect at hand of relieving the present stress of the labor supply is an organized effort to induce a large im-

migration of young men from the agricultural districts of the Eastern States. As before stated, the training and employment of these young men qualifies them at once for work in our orchards. In fact very many of the successful California fruit growers to-day were young farmer boys of the East, who came to California to make their fortunes and eventually devoted themselves to horticultural pursuits. While I am fully aware that there is no surplus of farm labor in the East, the great advertising California has received during the past few years has placed our advantages and greater possibilities before Eastern people generally, and I am persuaded that a united effort on our part would result in a large immigration of a desirable class of settlers. To bring about this Eastern immigration the folly of relying solely on individual effort is apparent. United and prompt action on our part will induce thousands of desirable Eastern people to make "Westward Ho" their watchword.

I would ask this convention through its Chairman to appoint a committee of fifteen, representing the various fruit districts of the State, to adopt such measures as will induce a sufficient supply of workers to come to the coast in time for the next harvest. By working in conjunction with the transportation companies, State Board of Trade, The California Promotion Committee, The Sacramento Valley Development Association, The San Joaquin Commercial Association, The Coast Counties Association, canners, packers, hop growers, dairy men and other bodies, much may be accomplished to relieve the labor situation before next season.

The above plan as outlined is feasible, and if promptly and energetically acted upon will prove of great advantage to us before the next harvest arrives. Let us then go resolutely to work to bring to our shores this enterprising class of young men, and heads of families, who only need the proper inducements to become residents of our State.

FRUIT MARKETING.

Eastern Fruit Shipments for 1902.

Hon. Alden Anderson, manager of the "California Fruit Distributors," presented at the Fruit Growers' Convention an outline of the shipments of fresh deciduous fruits made during the past season from the State of California to Eastern distributing points. He stated that the figures are correct as regards shipments made by growers and shippers reporting to his company. The small percentage of shipments otherwise made has been estimated.

The first car to leave the State consisted of cherries, and left Vacaville May 13th, twenty-one days later than the first carload shipment of the previous year. The last car, to date, consisted of a car of grapes from Concord on Nov. 24th.

The lateness of the season worked greatly to the disadvantage of California growers this year, particularly for two reasons: first, the different fruit growing districts in California ripened their fruit more nearly at the same time than ever before, and thus we had solid cars of the same variety of fruit leaving California at the same time to a greater extent than ever before. In other words, it did not allow the earlier districts to get through with their varieties of fruit before later districts began their harvesting. Secondly, it threw a great amount of our summer fruits into active competition with the summer fruits in the East and as all fruit districts in the East had good crops and same were marketed under unusually favorable conditions it made high prices for California fruits at this time impossible. The following is a resume of shipments by kinds of fruit:

Cherries.—245 cars were shipped as against 110 in 1901. Returns on the whole were very satisfactory.

Peaches.—1777 cars were shipped as against 1901 cars last season. Prices did not rule high. Competition with Eastern crops partly and poor railroad service were the principal causes. On the whole, prices were not as bad as they have been in time past, and some varieties made good returns.

Plums and Prunes.—1478 cars were shipped as against 936 for the previous season. This variety shows a large increase. It was a plum year in California, and all the trees in every district seemed to have borne to their fullest capacity. Added to this fact, the one that the same varieties of plums and prunes were, as before stated, being shipped from all shipping districts in California at the same time, made generally poor returns for the bulk of shipments.

Pears.—2011 cars were shipped as against 1535 for previous year. Fair crop in all sections except the San Joaquin valley. This was especially true in the Sacramento river region. Range of prices was low, and there was complaint of fruit arriving over-ripe, due to slow time by transportation companies.

Apples.—Our report only covers a portion of crop shipped. Our figures 359 cars as against 739 cars compiled by the Fruit Growers' and Shippers' Association last season.

Apricots.—222 cars as against 201 for previous

season. Apricots were used quite extensively for sorting carloads and such shipments gave satisfactory returns. The later shipments of straight carload lots were not remunerative.

Grapes.—There have been shipped to date 1033 cars as against 966 last year. These shipments were kept well distributed and sales have been uniformly satisfactory.

Besides the above, there were shipped ten cars of quinces and six cars consisting principally of figs, nectarines and persimmons, making a total for the season to date of 7141 cars, distributed as follows: Chicago, 1301 cars; New York, 1475; Boston, 745; Philadelphia, 295; Minneapolis, 419; Baltimore, 63; Cincinnati, 51; Kansas City, 101; Montreal, 102; New Orleans, 165; Denver, 104; St. Louis, 94; St. Paul, 267; Omaha, 165; Cleveland, 101; Pittsburgh, 278; Buffalo, 28; Milwaukee, 68; England, 156; Scotland, 9; minor points, Canada, 143; minor points, United States, 1010.

Report on the San Francisco Market.

By A. R. SPRAGUE, Chairman of Committee, to the Fruit Growers' Convention.

Your committee to whom was referred the state of the San Francisco market, with instructions to proceed to organize upon the plan reported to the last State Convention of Fruit Growers, beg leave to make the following report:

We started the work of organization first upon the Sacramento river, because that was the chief section from which perishable products are shipped to the San Francisco market. It was late in the season before an organization of the Sacramento river growers could be secured, and while it was proposed that this organization should be but one of several that should be centralized for the conduct of co-operative marketing in San Francisco, the season had already become so late that if anything was to be done during the summer of 1902 it was clearly evident the Sacramento river growers would have to take the lead. This they did and proceeded to rent a store and equip it for business. A large number of the heaviest growers on the Sacramento river were included in this organization, and shipped very freely to it. The membership of the California Fresh Fruit Exchange from the various sections where associations were established also shipped to this house, which was known as the Growers' Co-operative Agency. The business was entirely satisfactory and giving an excellent profit until somewhat past mid-season, when the action of the San Francisco commission merchants put in force a boycott, which rendered it exceedingly difficult for the Growers' Co-operative Agency to do business. Of course, it is well known that, while responsibility for the boycott is difficult to fix, its effects may be clearly traced. The retailers and peddlers were instructed that they would be unable to buy any supplies of the members of the Commission Merchants' Association if they did any business with the Growers' Co-operative Agency. This extended even to dealers at San Jose and other points. A suit has been brought, which is now before the State courts, to secure a withdrawal of the boycott and damages resulting from it.

At various times the growers have endeavored to secure of the commission merchants permission to do a co-operative business for themselves in the San Francisco market, but this has been in each instance refused and met with the declaration that it would be necessary for the growers to disincorporate and refuse entirely to do business upon a co-operative plan, or they would not be permitted to sell their own wares in San Francisco. In the opinion of your committee no other recourse is left to the growers of California who ship to the San Francisco market than to extend the work of organizing local associations and centralize these into an organization which shall conduct the business of selling perishable products in the San Francisco market. They would also recommend that the present law providing for a free market be made effective, and provision be made for opening the same without delay.

ENTOMOLOGICAL.

Parasitic and Predaceous Insects in the Orchard.

By ALEXANDER CRAW, State Quarantine Officer, at the Fruit Growers' Convention.

In no country in the world has the possibility of control of insects by introducing and fostering their natural enemies been so thoroughly tested as in California. The very notable instance of the entire eradication of the white scale by the introduction from Australia of its ladybug enemy, *Vedalia cardinalis*, demonstrated the possibilities in this direction in the most striking way. This one experiment saved the State its citrus industry, or the equivalent of many millions of dollars, and gave the greatest confidence in many quarters in this means of controlling insects, as well as incited the later action looking to the introduction of beneficial insects on a much larger scale.

This was the conclusion of Professor C. L. Marlatt, first assistant entomologist, U. S. Department of Agriculture, after an extended investigation of the subject in this State.

QUIET WORKERS.—Besides the *Vedalia* and its five

imported co-workers that keep the "cottony cushion scale" (*Icerya purchasi*) under control, we have numerous others that have proved of equal value to the orchardists of California. When an insect is causing damage in our midst, the attention of our orchardists and farmers are specially called to it and the subject is fully discussed at our fruit growers' conventions and farmers' clubs. When our insect friends become established amongst the pests, the result is a gradual decrease in the latter until few remain, and our trees and plants at last relieved from the great drain and poisonous effects of the scales, soon recover their wonted vigor and the orchardist forgets his tribulation. A case of this kind was recently called to my attention by an incident at a farmers' institute. The question was asked "if any one knew of an instance of benefit from parasites, outside of the *Vedalia*. No reply was made and the implication would have gone unchallenged had it not come to my notice, as the subject—although understood by our growers—requires some technical knowledge to discuss in public. I was not present but replied through the press and gave a list of scale insects, including the "soft orange scale," the "yellow scale," the "San Jose scale," and the "brown apricot scale," as well as other insects that are now held in check where their parasites have been established. All the above, besides a number of other scale insects, were formerly as destructive as the "red" and "purple" scales are today.

INTRODUCTION.—In introducing parasites and predaceous insects, species that live upon other insects, the orchardists and farmers can rest assured that they will never change their food and become pests themselves. No matter how hungry they are we cannot induce them to eat the most delicate foliage or fruit, in fact they will die of hunger before they attack other than the insects on which they are parasitic. While this is true, it is not safe for an orchardist to write to a friend in a foreign country requesting him to send such insects, for the reason that parasites have frequently other parasites that prey upon them, and great care has to be exercised to exclude these secondary parasites or rather to destroy them should any appear. Occasionally when we send out colonies of insects by mail the recipient writes back stating that he has so many acres of orchards infested and would like to have enough parasites sent to clean up his trees so that the coming crop will be free from smut. The State Board of Horticulture would be more than pleased to comply with such requests, but generally each applicant receives more than reached us alive in the original importation and from which the entire State had to be supplied. Others again are too impatient and write a few days after receiving a colony that they can see nothing of the parasites and have received no benefit from them, and from no fault of theirs as they had followed our instructions. This is not surprising, as most of the parasites are very small, in fact, some of them are nearly microscopic. In the case of internal chalcid parasites they pass nearly all their existence inside their host and only a short time in the perfect state after issuing. In that time they deposit their eggs for a succeeding generation. People not acquainted with their method of work suppose that they bodily devour the scale, aphid or other insects they attack and this removes all evidence of the pests. This is not the case. The female parasite pierces the scale with her ovipositor, depositing in most instances only a single egg in each scale. This hatches into a small, white, footless, blind grub, which soon devours the body of the scale as well as the eggs. It changes into a pupa and then to the perfect fly, still under the scale. With its mandibles it knaws a small hole through the back of the scales and makes its escape.

A FOE OF THE DIABROTICA.—This is substantially the transformation of all Hymenopterous and Dipterous parasites. The latter are two-winged flies and with few exceptions are parasitic upon caterpillars and chrysalids of moths and butterflies. A few prey upon some large scales and very few upon beetles. In fact, the first Dipterous parasite ever known to attack Coleopterous insects was discovered by the writer eating out the vitals of the destructive twelve-spotted Diabrotica. From 30% to 75% of the latter are destroyed by this parasite. Without this check these beetles would eat up nearly every delicate plant, flower and fruit. Unfortunately the Diabrotica breeds in the ground, feeding upon the roots of chrysanthemum and other soft-rooted plants, and is thus protected from parasites or other artificial remedies. When they develop, they do some damage before their parasitic flies increase sufficiently to check them.

THE LADYBUGS.—Among the beneficial Coleoptera (beetles) by far the most important are the various species of "ladybugs." All the species found in California are beneficial. The majority of them are aphid feeders, but quite a number assist materially in keeping down certain scale insects, as, for instance, the "cottony cushion scale" is held in check by the *Vedalia cardinalis*, *Novius koebelei*, *Novius bellus* and the "black *Vedalia*," reinforced by two internal parasitic flies, *Lestophonus icervæ* and *Dphelosia crawfordi*.

In certain sections near the sea coast, notably in

the orchards of the Hon. Ellwood Cooper near Santa Barbara, the Australian ladybird *Rhizobius ventralis*, has done splendid work against the black scale.

By persistent effort on the part of Mr. John Scott of Duarte, Horticultural Inspector W. H. Payne, of Monrovia, and other orchardists, it is becoming acclimated more inland. Mr. Wm. Barry, Horticultural Commissioner of Alameda county, at Niles, has kept the orchards of his district in good condition by the continuous distribution of this and other beneficial insects. As soon as scale appears in an orchard, he immediately places the proper parasites or predaceous insects therein and the spread or increase of the pest is checked. The orchardists of his district speak in very complimentary terms of Mr. Barry's work in this direction. When an orchardist receives a colony of ladybugs from the State Board of Horticulture, all that is necessary is to liberate them in an orchard having an abundance of the proper scale and they will attend to their business without any further assistance from the grower. The manner of propagating ladybugs differs from the Hymenopterous parasites before referred to. With the ladybugs the aphid-feeding species generally deposit their eggs in clusters when the feed is plentiful and these are attached by a glutinous substance to the leaves or stems of the plants on which they are placed, usually standing at right angles from the leaf or stem, and generally are of an orange or yellowish color. The *Vedalia* eggs are red, resembling the eggs of the cottony cushion scale, but smoother and deeper in color, and are laid singly by the female on the surface of the cottony sac. The *Rhizobius* eggs are pearly white and pushed under the edge of the scales by the ladybug. The young or larvæ of all the ladybugs have six legs, their bodies are long, without any resemblance to the mature insect. This frequently leads to the belief that the insects are a failure.

A NEW FRIEND.—In a paper read before the last Fruit Growers' Convention I referred to a new internal parasite of the black scale that the State Board of Horticulture had received from Prof. Chas. P. Lounsbury, Government Entomologist of Cape Colony, South Africa. Seventeen of the parasites reached us alive but only four were females. Unfortunately one of the latter was killed by a small spider, leaving us but three females to attempt the colonization of this valuable insect in the extensive orchards and brush lands of California. We have succeeded beyond our most sanguine expectations and six generations of *Scutellista cyanea* have been bred and distributed in all the counties where black scale is troublesome. In South Africa this little parasite keeps the black scale completely under control. Colonies placed in orchards in this State have gone through all their changes in the brief space of forty-seven days. This is extraordinarily rapid work when we take into consideration the fact that that effective internal parasite (*Comys fusca*) of the "brown apricot scale" takes one year, or rather but one generation is produced each year, and colonies can only be sent out to orchardists during the last week in May and first week in June. Colonies of *Scutellista* have been liberated upon orange, lemon, olive, prune, oleander, English holly and pepper trees infested with black scale and in each instance the parasites have attacked the scale and their young maggots have bred therein. This is certainly encouraging, as the celebrated *Vedalia cardinalis* positively refuses to eat cottony cushion scale raised on laburnum and a few other trees and plants.

THE SCUTELLISTA WILL SAVE THE PEPPER TREES.—The well-known pepper tree, with its pendant twigs and deep, green, glossy, fern-shaped leaves and bunches of bright red berries, has in recent years become an eyesore and nuisance, as it is a veritable breeding place of the black scale. It, however, bids fair to be restored in public estimation as one of our favorite street and avenue shade trees, for the *Scutellista cyanea* has evidently taken hold more kindly to the scales thereon than other beneficial insects have done.

The following extract from a letter dated November 3, 1902, written by Mr. J. W. Jeffrey, secretary of the Los Angeles county Horticultural Commission, is interesting: "Mr. Strong visited an orchard in Pasadena to which you had sent a colony. He found at least a dozen *Scutellista* in the puparium stage on a section of a pepper limb not 2 inches long. The puparia have since all become transformed into the liveliest flies I ever saw. I am usually very conservative but I confess to an inclination verging to great expectancy. Never was there a question of so much importance to our citrus fruit growers."

Mr. Jeffrey could have included other than citrus fruit growers, as the black scale is a very general feeder and one of the most difficult to control by sprays or fumigation, because in recent years it has been very irregular in its breeding season, and on this account scales can always be found containing eggs, and when in that condition it is difficult to make thorough work with either gas or sprays.

In all my experience with parasitic and predaceous insects, I believe that *Scutellista cyanea* will prove to be one of the most valuable yet introduced into California.

Agricultural Review.

ALAMEDA.

WONDERFUL railroad developments, which affect farming, are taking place in this and other counties about San Francisco Bay and through San Joaquin, Sacramento and other counties, to and through Plumas to over the mountains by Beckwith Pass. The railroad development, both steam and electric, affecting farming in all parts of California, is at present tremendous.

BERKELEYITES planted five hundred trees and had a great institutional function on Arbor Day.

BUTTE.

APPLES AND NUTS IN BUTTE.—Oroville Register: A railroad up the Feather river to Plumas county will open up a region well adapted to apples and walnuts. No better, larger or finer apples can be found than those of the hill portion of Butte and the valley part of Plumas. In the Big Bend country of Butte are growing the best walnuts in California, nuts that will command 15 cents a pound where the nuts of southern California bring but 10 cents a pound. The land can be bought now for \$4 or \$5 or at the most \$10 an acre. The trees will thrive without irrigation and are very prolific.

OLIVES IN PARADISE.—Dr. W. E. Mack has purchased all the olives in the vicinity of Paradise, and also has a force of men building a large olive oil mill.

THE Diamond Match Co.'s railroad is to be extended from Durham to the Sacramento river.

CONTRA COSTA.

TUNNEL BETWEEN TWO COUNTIES.—Contra Costa Gazette: "The hopes of the people of both Alameda and Contra Costa counties are to be realized in the tunnel road matter. For some time Supervisor Stow, of this county, has been rushing the work forward as fast as possible." On the Alameda end, it may be added, the supervisors have rejected all bids and authorized Supervisor Rowe to hire the equipment of the E. B. & A. L. Stone Co. and do the work. A franchise for an electric railroad through the tunnel has already been asked for.

RYE STRAW AND PAPER.—Antioch Ledger: The paper mill has received a lot of rye straw from the islands up river which it will use in experimenting to securing a very tough and superior quality of paper.

DEL NORTE.

DIED FROM WORMS.—W. P. Counts, of Tolo, Or., recently lost sixty out of two hundred head of calves he had just brought from Crescent City. On examining a dead animal a small bunch of fine white worms about the size of a horse hair and an inch in length was found beneath the valve on top of the windpipe. The worm is said to be produced in stagnant water. The disease is infectious and there is no known cure for it, as the bacilli penetrate the nasal passages and thence through all parts of the head.

FRESNO.

PRUNING.—At Sanger, several orchardists have commenced. Most of the large orchards will be pruned by Japs under contract.

MAKING STREETS AND ROADS.—Fresno City Council have discovered a way of making better streets, and possibly country roads at one-half the previous cost. It includes the use of a tamping machine. The Republican describes the operation on the street: "The roadway was first plowed and the spader was run through it. Then the oil was sprayed over it, and when the city had put it in this condition the patent device was run over it, mixing the oil with the soil. Then a light roller was applied and now the roadway is ready for inspection. Wagons used it during all the time when work was in progress, so that the street was never blocked—an important consideration in street work." The cost estimate is \$45 to \$38 per city block by this process, against \$90 to \$95 by the old way.

NEW VINEYARD ACREAGE.—The local nurseries have all they can do to supply the demand, and, in fact, some single orders for an unusually large amount of vines have been turned down.

CATTLE QUARANTINE LIFTED.—Democrat: The Federal authorities have notified Chas. H. Blemer, State Veterinarian, that, beginning on January 1st, cattle may be moved from Fresno, Kern, Tulare, Kings, Madera, Merced and Monterey counties to outside points in the United States, provided they pass a special inspection. The national quarantine line will remain unchanged, and it is an innovation without precedent in the history of the department for the Federal

authorities to make this special inspection the only safeguard to be observed.

RAISIN ITEMS.—Up to close of time for Association delivery, 4176 ten-ton carloads had been delivered and sold, and the payments to growers already aggregate over \$2,500,000.

HAVOC AMONG SHEEP.—Olcese & Depoli lost 365 head of sheep which were turned into the Fairview vineyard where arsenic was used last summer to rid the vines of the grasshopper plague, and more were sick. They will sue.

KINGS.

FOUR TRAIN LOADS OF CATTLE have arrived in the past few days, says the Hanford Journal. Newport & Michel have received fifteen cars, S. E. Biddle thirty-two, J. M. Nidiffer eighteen, and B. A. Packard twenty-one. The Biddle cattle came from Texas and the remainder from Arizona. One trainload was dairy stock. Mr. Nidiffer has gone to Arizona for another trainload.

THE LEMOORE WINERY of the Italian-Swiss Colony crushed 6000 tons of grapes this year—three times as many as it expected to—and turned out 750,000 gallons of wine and distilled products.

ABOUT DAIRY CATTLE.—Hanford Sentinel: G. S. Hewett, the stock man, for the San Joaquin Ice Company, has gone East to buy a trainload of dairy cows to be disposed of in this valley. The country south of Hanford to the lake is filling up with dairy cattle wonderfully fast.

ROSENBERG BROS cracked 140 tons of apricot pits.

KERN.

OIL NOT GOOD FOR IRRIGATION.—Nine irrigation and canal companies supplying water to farmers have served notice on the oil companies that unless they stop polluting Kern river suit for damages will be brought.

LAKE.

A BETTER OUTLOOK.—Lake County Bee, Lakeport: For years some of the finest apples ever raised in the State have been allowed to rot on the trees or fall to the ground and be eaten by hogs, while pears have been shipped from here for several years. An attempt made this year to market apples in considerable quantities by wagon over the mountains is the first and is highly important to this section.

LOS ANGELES.

THE high price of wood and coal has caused the installation of a good many distillate burners in cook stoves.

MARIN.

A CONTRACT will be placed for the building of a tunnel 3100 feet long through White's hill, on the North Shore Railway line.

MENDOCINO.

A BIG RESERVOIR.—Press-Dispatch: W. P. Thomas, H. B. Muir, R. E. Donohoe, John McMurray and others have bonded the Walker Valley ranch, consisting of about 10,000 acres, for the purpose of putting in a dam at the lower end of the valley and storing and conserving the water for the development of electric power and furnish water for irrigating Ukiah valley. It is expected that it would increase creamery business. It is proposed to stock the reservoir with choice fish. The reservoir would be some 2 miles in length and an ideal place for boating, fishing and summer outings.

MONTEREY.

BULL FIGHTS.—Bull fights are frequent. Last week the matador got the bull's horn in his leg.

SOLEDAID CARROTS.—Cor. Salinas Index: S. J. Kitzmiller, agent of the S. P. Milling Co. here, received a check for \$2000 from Victor Cauhape of San Jose for his 20-acre crop of carrots raised at the Mission to be used as feed for cattle.

NAPA.

CREAMERY.—Register: Manuel Alameda has opened a creamery.

NEVADA.

HARVEST IN TRUCKEE.—Republican: At Prosser creek they have 8 inches of ice, which is perhaps the thickest any place, while the other ponds have all got a good start. At the present rate the ice will be harvested by the holidays. The thermometer ranges around zero these nights. Winter sports are at their best here now. There are fine sleighing, excellent coasting and the best of skating.

PLACER.

THE olive crop around Penryn is good in quantity and quality.

A GOOD SHOWING.—News: The New-castle Fruit Growers' Association disbursed over \$1600 in dividends among its members as a result of savings on loading

charges and profits on boxes and other packing supplies. The Association will probably also purchase the shipping house from the Exchange as a further result of this year's business. The directors are: J. L. Nagle, president; G. Geraldson, secretary; C. H. Kellogg, Frank Tupper, J. K. Correa, Jr.

REAL ESTATE AND RENTS.—There is more activity in real estate matters in and around Newcastle at the present time than there has been for the past twelve years. Strangers are coming in, and every house in town can be rented to half a dozen applicants.

PLUMAS.

N. C. O. RAILROAD EXTENSION.—Reno Journal: The N. C. O. Co. has officially announced that it will extend its Sierra Valley line from Mohawk valley to Quincy next season. This will bring a large and rich territory into communication with Reno.

SACRAMENTO.

PATRONS OF HUSBANDRY celebrated the thirty-fifth anniversary of their organization last week.

CREAMERY TELEPHONE.—Glendale Creamery will have a private telephone line to Franklin, 9 miles north.

SAN BENITO.

HOLLISTER needs a packing house, the Advance says.

SAN DIEGO.

MESQUITE LAKE, near Imperial, will be drained by a canal.

IRRIGATION BONDS VOID.—The Superior Court of Riverside has just rendered a decision that the \$187,000 worth of bonds of the Perris irrigation district, transferred to the Bear Valley Co., are void, together with all the interest.

SAN FRANCISCO.

SHEEP MEN FINED.—Judge DeHaven fined sheep men \$100, or thirty days, for entering the Stanislaus reservation after he told them not to.

SAN JOAQUIN.

GRAPE SHIPMENTS FROM LODI.—Fifteen hundred full carloads of grapes and other fruits were shipped from this point during the season, and at least 250 additional cars were sent out in less than carload lots—these figures including green fruits, etc., as well as grapes. Of these, 245 were of table grapes worth \$245,000, and 1225 were of wine grapes worth \$376,675. To these must be added the value of the 250 cars or more sent out in broken lots, at least an additional \$100,000, bringing the grand total up to \$721,675. These figures do not include shipments from Acampo, or from the extreme northern part of the county, which were shipped from Galt and other stations. The distribution of the money received for this season's output has greatly stimulated all lines of business.

IRRIGATION ON ROBERTS ISLAND.—Woods Bros. are creating an irrigation system to cover some 5000 acres of land on Roberts Island, almost entirely owned by them. One thousand acres are already rented by Chinamen for garden truck, potatoes and beans. Over 1000 acres of the land was recently transferred to them for \$50 per acre.

SANTA CLARA.

WILL LIQUIDATE.—The proposed committee to wind up the affairs of the California Cured Fruit Association received more than enough votes to give them the legal power and will proceed to liquidate. The committee thus appointed are men of high standing, ability and integrity.

FOR THE BEAUTIFUL.—There is a large demand in this valley this season for ornamental nursery stock; also a good demand for prune and apricot nursery trees, but peaches are comparatively neglected. Prices generally are higher.

USED ALVISO AT LAST.—For the first time in the history of the valley prunes have been shipped by way of Alviso recently. The steamer San Jose carried over 400 tons of fruit to San Francisco, where most of them were loaded for export.

SHASTA.

NEW CREAMERY.—W. G. Ballis, who has been conducting a creamery at Edgewood, and others will build a new creamery in Shasta valley, to be in operation about the March 1.

A ROAD FOR AUTOS.—Mrs. Phoebe Hearst, Col. Dan Burns and other wealthy people are building an automobile road from their settlement on McCloud river to Shasta Springs, 19 miles in an air line, except a curve of a quarter-mile. The road will cost a great deal of money. The scenery along the road is grand.

SONOMA.

FEED.—Dixon Tribune: Feed is mak-

ing remarkable growth in this section and stock are quite independent out of doors these days. Grain that is up is looking well.

SOME PITS.—Suisun Courier: The Ernst Luehning Co. has completed the work of cracking apricot pits for this season. The work reached much greater proportions than was anticipated at the beginning of the season, over 1000 tons being handled by this company alone.

SONOMA.

HOT SPRINGS.—Farmer: An artesian flow of hot water has been tapped on the Agua Caliente Springs property and a modern \$50,000 hotel is probable.

GROWERS' CANNERIES.—T. V. Barlow and others have succeeded in organizing the blackberry men and doubling the price of that fruit, and many growers whose peaches and pears rotted on the ground this season believe that the time is ripe for action. There are openings for growers' plants at Sonoma, Santa Rosa, Healdsburg and in Analy township, planned along business lines, backed up by the growers of good fruit and handled by honest and capable men.

COYOTES.—Two were recently killed in Alexander valley.

OLIVE CRUSHING has begun in Sonoma county. The crop is large and fine.

A BANK FOR GEYSERVILLE.—Subscriptions are being solicited.

SUTTER.

NATURAL PROSPERITY.—Independent: The north wind and dry weather have put the tule and adobe lands in fine shape and everyone is on the hustle to get the crop in while the weather is good.

CREAMERY TO BE SOLD.—At a recent meeting of the stockholders of the Meridian creamery it was decided to sell the entire plant January 14. It has not been successfully or steadily run.

AFTER YEARS OF LITIGATION.—The famous Tisdale road matter is at last settled. The road is to run over a portion of Tisdale's land that will put it out of water at all times and dispense with the building of a long and expensive trestle.

STANISLAUS.

THE SCANDINAVIAN COLONISTS in the Turlock quarter have organized a co-operative store on the Rochdale plan. Under this system the profits are divided among the shareholders.

CANAL CONTRACTS.—Contracts for the bridges and drops in the Modesto district have been let.

TEHAMA.

POISONED SHEEP.—Near Paynes' creek, this county, several hundred sheep have died from some poisonous thing in the herbage. The same trouble, in a less degree, is reported from several other places in the same section of California.

TULARE.

CHANGED PACKERS.—Orosi Offer: Women and girls are employed by A. Gregory & Co. in packing oranges at Sultana this season. Heretofore Chinese did this work.

THE Paige ranch, near Tulare, shipped 282 carloads of grapes to the wineries this year.

YOLO.

SHEEP FEED AT DUNNIGAN.—Woodland Mail: Several large flocks of sheep have been lately moved into this locality. A herd from the northern part of the State has been driven down to the old Pace & Cramer range.

THE EARLY BIRD.—Woodland Democrat: It is unlawful to shoot ducks half an hour before sunrise, but this morning a regular bombardment began in the marshes before it was light enough to see.

YUBA.

WILLIAM THOMPSON, propagator of the seedless grape known by his name, and an old resident of Sutter county, died at his home near Sutter City this month of cancer of the throat.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circular. THE LAWRENCE-WILLIAMS CO., Cleveland, O.



THE HOME CIRCLE.

The Lighthouse and the Whistling Buoy.

The sea sand drifts about my feet and
whitens on the dunes,
While, still complaining to the sky, the
rocking water croons;
The salt, salt spray blows in by day, by
night the breakers roar;
The white sea-horses toss their manes, all
trampling on the shore.

All hours I hear the whistling buoy across
the long tides cry,
And watch the smoke of steamships trail
along the down-bent sky,
And see the fog bank mountains build, or
doze and dream all day,
Or count the sails of fisher boats, or watch
the porpoise play.

But night at last steals down the sky, and
be it late or soon,
And be the ocean lanky black or whitening
to the moon,
Or ruffling to a quiet wind, or, storm-
lashed, breaking high,
All night on all its changing moods I keep
a watchful eye.

And coastwise throw a steady beam, by
which the good ships steer;
And meanwhile sounds the whistling buoy
to bid them come not near.
We have the trade of States to guide, and
lives of sailor men,
And sleep not till the screaming gulls call
up the day again.

And when the little fisher boats come
battling up the bay,
We call them in by pier and port, or bid
them steer away.
So up and down our coasts they ply, and
fear its reefs no more
While whistling buoy and lighthouse
keep their watch along the shore.

—St. Nicholas.

Jim's Schooling.

The capitalist looked up from the card
he held in his long, slender fingers. He
saw a dark-eyed young fellow, with big
shoulders and resolute chin. At least
those were the distinguishing charac-
teristics the elder man first noticed.

"James Protheroe," he murmured.
Then he added, with a little gasp,
"Not the son of my old boyhood pard,
George Protheroe?"

The young man smilingly nodded.
Whereupon the older man seized him
by both hands and forced him into a
chair.

"My dear boy," he cried, "where
were my eyes? Why, you are just
like your dad. Well, well! Bless him,
I haven't seen him for twenty years.
Call you James, eh? What's that
for?"

"You, sir," said the young man.
"For me? Shake hands again,
namesake. You are a remarkably fine
young man. And how's father?"

"Very well, sir. He sends you a
letter," and the young man drew it
from his pocket.

The capitalist glanced it through
with a kindling eye.

"Sounds just like old George," he
chuckled. "Um-um-um. 'Loan you
my boy, Jim. Teach him a little husi-
ness. Got some capital he might in-
vest. Good boy.' Um-um-um. 'It
would be funny, wouldn't it, if Jim and
your motherless girl would take a
shine to each other? I wouldn't ob-
ject. I know she comes of good
stock.'"

"What's that?" cried the startled
young man.

"That wasn't meant for you to
hear," laughed the other, as he folded
the letter and pushed it in his pocket.
Then he added: See here, my boy,
you must come along with us to Bev-
ington. We are going down there on
my private car; a thirty mile ride over
our new suburban road. I've got husi-
ness with a man at Bevington that
must be attended to this noon. Then
I've got to get back here at 3 o'clock
to meet a New Yorker, who is passing
through. My daughter, Ethel, Miss
Mayer, her companion, and two young
college fellows of her acquaintance will
go on the trip with me. Ethel will
take along a hamper and feed us in the
car, and we ought to have a jolly time.
I want you to meet my daughter.

"Thank you," said the young fellow.
"I believe I have already met her. I went

to your home to see you and found you
had left the house a little earlier than
usual, and your daughter—I'm quite
sure it was your daughter—kindly told
me that you never transacted any husi-
ness at home."

The two men laughed together.
"But you told her who you were?"

"No, I didn't," replied the young
man. "After her remark I couldn't
very well. It's business, you know,
that brings me to Cleveland."

James Norcross laughed again.

"She probably took you for a col-
lector," he chuckled. "But, here, we
must be off. We have to meet the
others at the square in just ten min-
utes."

They were there and waiting when
the two men approached.

"Ethel," said the older man, "I
want you to become better acquainted
with Mr. James Protheroe, of Kansas,
whom you have only met in a business
way, I believe. You have heard me
speak of his father."

The fair young girl, with just a
slight flush, extended her hand.

"The name of Protheroe is a house-
hold word with us," she said, with a
smile that Jim Protheroe thought the
sweetest he had ever seen. Then she
presented him to Frauline Mayer,
and made him acquainted with Mr.
Hosmer and Mr. Barrington.

"You've surely heard of Mr. Bar-
rington," she said. "He was on the
Harvard football team of '98, and Mr.
Hosmer is the champion sprinter of his
college."

Young Protheroe bowed gravely
in acknowledgement of the honor
conferred upon him in coming in personal
contact with such special distinctions.

"Are you a college man, Mr. Proth-
eroe?" inquired the eminent Barring-
ton.

"Yes," replied the Kansas youth.
"Adams, '97."

The young men looked at each other.
They had never heard of Adams.

Just then the car got under head-
way, and Ethel's father called Jim
to step to the rear door and have a
look at the roadbed. Ethel was sur-
prised at the glance that had passed be-
tween Hosmer and Barrington. It made
her feel a little chagrined. They were
evidently sneering at the Western
young man. Really, there was some-
thing different about him. His clothes
were not quite like the other men's.
He didn't wear them with just the
same nonchalance. He appeared
rather heavy and slow. Very likely
he was as dull as he acted. And yet
he certainly seemed a very presentable
youth. Some people might even call
him handsome.

Her train of thought was inter-
rupted by her father's voice.

"Why, bless my soul, boy," he was
saying, "you know more about rail-
way building than I do. Where did
you pick it up?"

"Helped lay out a road in western
Kansas," replied Jim. "That's one of
the things we learned at Adams. I
believe I have the right to put 'civil
engineer' after my name."

So he does know a little something,
thought the girl, but it seemed like
such uninteresting knowledge. Truly,
he was decidedly different from the
Eastern boys.

Then her father and Jim came into
the car and the conversation became
general.

Ethel noticed that Jim held his own
pretty well when he did talk, but for
the most part he was but a listener.
There was one thing that she was
grateful to him for. She knew that he
admired her. His frank, open glance
told her that. But he had the good
sense not to annoy her by any special
attentions.

Pretty soon the little party scat-
tered, Jim and the young men going
out on the rear platform to smoke,
leaving father and daughter and chap-
eron in the car.

"What do you think of Jim?" said
the capitalist.

"Rather strong of Kansas, isn't
he?" laughed Ethel.

"Oh, I don't know," said her father.
"He doesn't make any parade of his
talents. He's just like his old dad.

There wasn't a keener boy in town.

We were chums, you know, and both
of us started in without a dollar. I
fancy we've both done pretty well."

"Is Mr. Protheroe's father a man of
property?" inquired Ethel.

"I should say he is! The last I
heard about him he owned the opera
house, the hotel, the bank, the finest
residence in town, and held a first
mortgage on the biggest meeting
house. Jim's financial future is all
right. He's an only child, you know."

"No, I didn't know," said Ethel.

The big hamper turned out to be
most beautifully loaded, and everybody
brought along a picnic appetite. Then
they rolled into Bevington, and, leav-
ing the ladies in charge of the two
Eastern men, James Norcross took the
Kansas lad and started to keep his en-
gagement with the local townsman. It
was not a long engagement, and at one
o'clock they were back in the car, and
the capitalist signalled the motorman
to go ahead on the return trip.

"We should be able to run the
thirty-two miles back to Cleveland
nicely in two hours," he said to Jim.
"I must be there at 3 o'clock and
we have a clear track all the way.
We've had litigation over this road,
and it isn't doing a regular business
yet, but we'll be running on a schedule
in a day or two."

"They were out of earshot of the
others, and Jim leaned toward the cap-
italist.

"Mr. Norcross," he said, "have you
noticed that the motorman has been
drinking heavily?"

"No!" cried the capitalist. "Has
the idiot started one of his periodical
sprees? Best man in my employ
when he's sober. When he's drunk
he's a stupid log. Keep your eye on
him, Jim."

The young man nodded and started
down the aisle to the motorman's ves-
tibule.

It might have been ten minutes later
when he noticed that the speed
was increasing to a dangerous rate.
Looking ahead he saw—a mile or so
away—a sharp curve. He knew that
it was highly hazardous to attempt to
strike it at that high rate of speed.
He reached forward and caught the
motorman by the arm. The latter
turned with an oath, and instead, ris-
ing to his feet, struck at him blindly.
Jim flung him aside, shut off the power
and put on the air brake. The
car slackened speed reluctantly, but
finally came to a standstill half way
round the curve.

Then Jim turned. The motorman
had fallen and struck his head against
the ironwork at the end of a seat. He
was lying on the car floor unconscious.

Ethel was unaware that anything
unusual had taken place. She sat in
the last seat at the rear with her back
to the front of the car, her companion,
Miss Mayer, beside her. Presently
her father came down the aisle and
stopped.

"I was beginning to wonder where
all the men were," said Ethel, as she
laid her hand affectionately on her
father's arm. "I felt quite neglected.
Are you waiting on a switch?"

"There has been a little accident,
my dear," said her father. "We are
not on a switch?"

"Accident, papa!" Who is hurt?"

"The motorman. But not seriously.
Jim says he has a scalp wound and a
broken collarbone. He's got him
all bandaged up nicely, and as soon
as he gets over the effects of the—
the shock he'll be in very fair shape."

"Is Jim—Mr. Protheroe—a surgeon,
too?"

"He's something of a surgeon," re-
plied her father, with a laugh. "It's
another one of those things he learned
at that remarkable college. It seems
that half a dozen of his college mates
had planned a trip to the Bad Lands,
and they knew they ought to have a
surgeon doctor along, so Jim volun-
teered and took a six months' course in
the rudiments."

Ethel looked out of the window.

"Where are we, papa?"

"About ten miles from nowhere,"
snarled the capitalist. "And I'm
needed in Cleveland at 3 o'clock for a
most important conference."

"Well, why don't you go ahead?"

"Without a motorman? Besides
we've husted something in the running
gear. It happened in slackening up
suddenly. Do you hear that pound-
ing?"

"Now I hear it, papa."

"That's Jim under the car trying to
tinker up the break."

"Is he a mechanic, too?"

Despite his anxiety the capitalist
laughed again.

"It seems so," he said. "It's an-
other thing he learned out there in
Kansas. I suppose we are just be-
ginning to find him out. You were
frightened about it. He isn't much like
other youngsters of his age."

Still laughing Ethel's father left the
car and joined the two Eastern college
men, who were standing not far away.
Ethel raised the window and looked
out. As she did so she caught sight of
Jim. Hatless, coatless and vestless,
his thick hair wildly tumbled and his
face smudged with dirt, he was facing
her smiling father.

"Waiting for orders, sir," he said,
with a comical pull at his hair.

"Can you run a motor, too?" asked
the capitalist.

"I've had some experience at it,"
replied Jim. "Father built the Alfalfa
& Stony Ledge Electric Road and I
ran the first motor over it. If you'll
sit with me and keep me posted on the
points I'll promise to haul you through
on time."

"All right, my boy, run her through
on schedule time and I'll give you a
permanent job."

The capitalist looked up and caught
his daughter's eye and laughed again.

As Jim turned away Ethel called
softly to her father:

"Daddy," she murmured, "don't
you forget to ask him up to dinner to-
night."

Her gratified parent looked up at
her with a quizzical smile that called a
swift blush to her cheek.

"All aboard!" shouted Jim.—Cleve-
land Plaindealer.

Where Coffee Is Grown.

Coffee, like other things, is not al-
ways grown where the advertisements
say. When the grocer is asked for a
pound of Java or Mocha coffee he pours
out several hundred dark brown beans
which probably never saw the other
side of the Atlantic. If the coffee could
speak, it would be apt to say it was
raised in Brazil, where at the present
time the greater part of the world's
supply is grown.

The little island of Java, in the East
Indies, and the little town of Mocha,
with its 5000 inhabitants, on the banks
of the Red sea, in Arabia, have now, in
fact, if not in name, given way to the
great South American republic. Tavel-
ers in the State of Sao Paulo, in the
southern part of Brazil, tell of enor-
mous coffee plantations, some of which
contain more than a million coffee
trees.

At Buenopolis, for example, is a plan-
tation which is said to be the largest in
the world, and which has 5,000,000
trees. The coffee tree when wild grows
as high as 20 feet, but when cultivated
it is only half as large, with evergreen
leaves and white flowers in the blossom-
ing season.

The fruit is a pod containing one or
two beans. The pods are spread out
on an open field to dry, and often these
drying grounds cover nearly a square
mile. When thoroughly dry the pods
are run through machinery, which sep-
arates the beans into two kinds, those
flattened on one side and those of com-
plete spherical shape. The first is
called Java coffee and the second Mocha
coffee.

The coffee raised on these great plan-
tations of Buenopolis is sent by rail to
the port of Santos, on the Atlantic
coast, where it is shipped to all parts
of the world. Brazil produces each
year about 660,000 tons, although the
world's consumption is estimated at
only 600,000 tons. There is thus at
present an overproduction of the coffee
bean, which has frightened many deal-
ers to such an extent that recently
they met to consider how they could get
more people to drink coffee. They said

that there had been so much talk about coffee hurting the nerves that the business, unlike almost every other business in these prosperous times, had been on the decrease. How far this movement to increase the drinking of coffee will succeed is still a question.

The Song of the Ages.

For not far off in realms of space,
The Spirit hath its throne;
In every heart it findeth place,
And waiteth to be known.

Thought answereth alone to thought,
And soul with soul hath kin;
The outward God he findeth not
Who finds not God within.

Then go not thou in search of Him,
But to thyself repair;
Wait thou within the silence dim,
And thou shalt find Him there.

For not in far off realms of space
The Spirit hath its throne;
In every heart it findeth place,
And waiteth to be known.

At the "Cow College."

A. J. Pillsbury, the gifted editor of the Tulare Register, visited the domestic science, or housekeeping science, of a public school the other day, and says: "In the person of Miss McIntyre, in charge of this department, the writer found an enthusiast in her work, and one who communicates her enthusiasm to her pupils. She insists, with much force, that her work lies at the foundation of civilization because people are what they eat. In other words, a badly nourished body means a badly nourished brain, and a badly nourished brain means poor work in the world performed with pain resulting from indigestion.

But as to the domestic science course: Before taking it up a young woman ought to have had a year in chemistry, but that is not absolutely indispensable and Miss McIntyre would advise the giving of cooking lessons in the eighth grade.

Her pupils devote seven hours per week to laboratory (kitchen) practice and one hour to lectures, these "hours" being study hours of forty-five minutes each.

The first term is devoted to the application of heat to starch and the proteins and all the work is done on paper and as thoroughly understood as possible before going into the cooking school at all, so that the pupils understand just what they are going to do and just why they are going to do it.

Then they do it and with just as much exactness as they employ in Sloyd. A spoonful means just so much, no more, no less, and if the girls make biscuits a thousand times they will be just the same every time, and are compounded as accurately as druggists' prescriptions.

The first term of thirteen weeks, with eight study hours per week, is devoted to breakfasts. The second term is devoted to luncheons and suppers, the third to dinners and receptions—so-called banquets—and all through the entire course run instructions on dietetics, the preparation of foods for the sick room, the proper serving of meals, economies in cooking and buying, the prevention of waste (there is no swill barrel used in connection with scientific cooking), so that it is all consumed and in a way which enables it all to be digested.

The result of all this instruction is that the standard of living is raised and the cost of living reduced. Health is preserved and meals are served delicately and appetizingly. The chemical and digestive processes are known and home cooking becomes an exact science with no element of luck in it.

As a great many farmers entertain a hearty contempt for what the agricultural professor knows, so a good many mothers, who pride themselves on their skill as cooks, may affect a contemptuous attitude for school cooks, but none the less these instructors do know a great deal that farmers and housewives would be the better for knowing. The theoretical without the practical is only half the lesson that

ought to be learned, as the practical without a knowledge of the scientific reason why is only the other half. The future is to the man and the woman who knows as well as to those who do, and the more they know the better will they do.

The completed domestic science course embraces house arrangement for the sake of convenience and the saving of labor, also house furnishing in good taste and with proper economy, in short, many things not here set down that will help fit the girls of our high schools to enter into the business of living and, if need be, for making a living.

My belief is that when people begin to realize the value of this sort of training they will demand that the domestic science course be made a part of a high school education.

Rivers Nile and Colorado.

Professor R. H. Forbes of the Government agricultural station at Tucson, Ariz., makes the following comparison:

"The Colorado river is in many respects remarkably similar to the historic Nile. Like the Nile, it rises in a distant, mountainous country; its lower courses traverse a subtropical and nearly rainless desert; and both rivers empty into great land-locked arms of the ocean at a little less than 32° north latitude. Like the Nile, the Colorado has, for long distances along its lower courses, created a narrow ribbon of fertile soil in the midst of the desert through which it flows, and has deposited a great alluvial delta between Yuma and the Gulf of California. The delta is chiefly Mexican territory. Like the great river of Egypt, the Colorado is subject to an annual summer rise sufficient to overflow great areas of its border and delta lands. These high waters are rich in fertilizing sediments, are exceptionally free from alkaline salts, and come at an opportune time for irrigation. When the Colorado floods are less than normal, the Yuma Indians fail of satisfactory crops, just as do the Egyptians with a low Nile.

"Although the climatic conditions in winter are slightly more severe in the Colorado delta than in that of the Nile, yet these two regions closely resemble each other agriculturally. Some common products are (or may be) alfalfa, wheat and grains of the sorghum class; the date palm, fig, orange, olive and pomegranate; cotton melons and sugarcane.

"When the Colorado is understood and utilized as successfully as is the greater and better known parallel, it will be recognized as the American Nile, the creator of a new country for the irrigator and Mother of an Occidental Egypt."

"Our Benevolent Feudalism."

Commenting on W. J. Ghent's brilliant book on "Our Benevolent Feudalism," in the Toronto Sun, Prof. Goldwin Smith asks: "Who would have thought fifty years ago that the world would ever be in danger of falling into the hands of a set of gigantic speculators and stockbrokers, owing their enormous wealth, many of them, to means which would make submission to their rule anything but elevating to mankind? Mr. Ghent can not be contradicted when he asserts that the multi-millionaire in a wealth-worshipping age has everything pretty well in his power—legislatures, judiciaries, churches, universities, and, perhaps worst of all, the press. He cites the words of an eminent journalist to show

Catarrh Cannot be Cured

With LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quack medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O.
Sold by druggists, price 75c.
Hall's Family Pills are the best.

how completely the writer is apt to become the tool of sinister influences which own the journal. At a cost which to him would be trifling, one of these millionaires might probably control for his own purposes the leading journalism of this Province (Toronto) and run out of circulation any journal that counteracted his will. 'What is behind the press?' is about the most serious question of the day."

"Betsy and I Are Out."

(Revised version.)

Said my better half, Bess,
"I must have a new dress."
But in spite of her petulant pout
I refused her demand
You can now understand
Why "Betsey and I are out."

But 'tis needless to say
That she had her own way.
(She usually does without doubt.)
You can see if you will,
By a glance at the bill,
How much "Betsey and I are out."

Will we Talk Through the Air and Earth?

When Marconi made his discovery of that marvelous thing, wireless telegraphy, the world waited expectantly for the supplementary wireless telephony. It was soon forthcoming. First, Prof. Ruhner showed that spoken messages could be sent for miles without any wire—simply through the agency of a ray of light, and the curious new metal, silenium.

But the learned German was not the first discoverer of wireless telephony. A young Brazilian priest in 1900 obtained a patent in his own country for an apparatus which he called a gourd-aphone, by means of which he could transmit spoken messages without the aid of a wire. Ever since then he has been perfecting his system through great difficulties. The church frowned upon his efforts, the public sneered crying out that he was in league with the devil, broke into his study and demolished his apparatus, but he saw a wonderful truth ahead, and he kept steadily on the track of it, until now he announces that he has perfected a system—wonderfully simple—by means of which spoken messages can be sent to a distance through a luminous axis, not only without wires, but without the intervention of silenium or of a microphone. "Nay," he continued, when telling of his marvelous discovery, "even a receiver will not be necessary. All persons within the radius of reception will be able to hear the message with the aid merely of their natural organs."

"And what is the distance to which you can reach?"

And then the pale young priest—worn nearly to a shadow by study—quietly made the astonishing answer: "Practically infinite."

That reply thrills every fibre of one's being, and lifts the imagination ad astra, for may this not in the end make practical the wild dreams of communicating with our sister planet? Surely, science is the later day magician. But let her be humble. Let not a little knowledge make her so mad that she will disavow the Great Source of all truth—the Mighty Manager of the universe machine, who lets man gradually into its secrets, lifting him by degrees nearer in knowledge to Himself.

Merit of Orange Juice.

Professor Kiosto, an eminent Japanese bacteriologist, also Professor Koch and others, have shown that the acids of lemons, apples and other fruits, citric acid and malic acid, are capable of destroying all kinds of disease germs. Cholera germs are killed in fifteen minutes by lemon juice or apple juice, and typhoid fever germs are killed in half an hour by these acids, even when considerably diluted.

If you squeeze a lemon into a glass of water containing cholera germs, and let it stand fifteen or twenty minutes, you may drink the water with impunity, as the germs will be dead. These juices will kill other disease germs. Instead of telling a man to have his

stomach washed out, we can now tell him to drink orange juice, which will cleanse the stomach as thoroughly as a stomach tube, providing it is not a case of gastric catarrh.

If we have to deal with gastric catarrh, in which there is a large amount of tenacious mucus adhering to the walls of the stomach, a stomach tube to dislodge it is required, but in ordinary cases of biliousness, foul tongue, bad breath, sick headache, and nervous headache, a fruit diet is a wonderful purifier.

The fruit diet will cleanse the stomach and the alimentary canal, and drive off disease germs, which are responsible for a large share of our ailments.

Why We Should Eat Apples.

German chemists have established the fact that apples contain a larger per cent of phosphorus, the element essential to the renewal of the nervous matter of the brain and spinal cord, while the acids are of signal use to persons whose livers are sluggish owing to sedentary habits, the acids serving to eliminate from the system noxious deposits which would retard the action of the brain and induce skin ailments and produce boils. Hence the wisdom as well as relish of taking apple sauce with roast pork and goose. The malic acid of ripe apples, either raw or cooked, will neutralize any excess of chalky matter engendered by eating too much meat, says the St. Louis Republic.

It is also a fact that such fresh fruits as the apple, the pear and the plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable salts and juices are converted into alkaline carbonates, which tend to counteract acidity.

A good, ripe, raw apple is one of the easiest of vegetable substances for the stomach to deal with, the whole process of its digestion being completed in eighty-five minutes.

YOU MIGHT DO WORSE.—To keep off disease, eat onions raw. To cure spasms, rub them on the spine. To cure typhoid fever, bruise with a hammer and bind on the feet. To cure chills, bind around waist and to the pulse. Bind to throat for diphtheria. For a burn wet with raw juice. To cure a cold, boil and eat with butter. For croupy babes, slice and sprinkle with butter and cover closely; when the juice runs out give spoonful ever hour. To keep people at a distance, just eat a few raw ones in the early spring. They are a great stimulant, in the raw state, both of energy in yourself and in others.

WORRY.—Worry is to the human body what friction is to machinery. It is not the work we do, but the worry that wears out the body. It is not the revolutions, but the friction that wears out machinery.

TO REMOVE WARTS.—Take copperas and enough hog's lard to make a paste; apply two or three times a day.

What is the
brightest name in
American story?

MACBETH'S is on
the brightest lamp
chimneys.

If you'll send your address, I'll send you the Index to Lamps and their Chimneys, to tell you what number to get for your lamp.

MACBETH, Pittsburgh.

The Markets.

General Market Conditions.

CHICAGO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	73 @ 73	76 1/2 @ 75 1/2
Thursday.....	73 1/2 @ 73 1/2	75 1/2 @ 75 1/2
Friday.....	73 1/2 @ 72 1/2	76 @ 75 1/2
Saturday.....	72 1/2 @ 72 1/2	75 1/2 @ 75 1/2
Monday.....	72 1/2 @ 73 1/2	75 1/2 @ 76
Tuesday.....	73 1/2 @ 76	76 1/2 @ 77

CHICAGO CORN FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	56 1/2 @ 54 1/2	43 1/2 @ 43 1/2
Thursday.....	54 1/2 @ 54 1/2	43 1/2 @ 43 1/2
Friday.....	55 @ 54 1/2	43 1/2 @ 43 1/2
Saturday.....	54 1/2 @ 55	43 1/2 @ 43 1/2
Monday.....	54 1/2 @ 55	43 1/2 @ 43 1/2
Tuesday.....	55 @ 55 1/2	43 1/2 @ 44 1/2

HOW TO MARKET.—Walter Anthony of Cupertino suggests that fruit growers would get more for their fruit if they would get together and arrange to market one-half of it at a time. And the Reedley Exponent says: "We want no more such business in the fruit packing line as has prevailed here the past season, and the way to stop it is to form a co-operative packing company and hire a competent man to run it." The Santa Rosa Press-Democrat says that shipments of dried fruit are being constantly made by the M. L. McDougald Jr. Fruit Packing Co. to the East and to Europe, mostly to Europe. The Lompoc Record, speaking of apple marketing, says: "Another season and the fruit growers will organize a fruit exchange and go about the sale and handling of our fruits with some system and unanimity. Messrs. Clark and Poland have marketed their own fruit this season and realized the highest price going. This is what a fruit exchange will do for all of us if we form an effective organization in time to put this section in touch with the buyers in all parts of the world. Money, and lots of it, has been lost this year because we were the last to receive attention from buyers." Even the Pacific Fruit World, representing the dealers, says: "The Fruit World believes in the legitimate function of the speculative dealer, but it does not believe in the individual ability of scattered and isolated producers to procure market prices for their product."

THE STOCK OF WHEAT.—Bradstreet's says: Following will be found the total visible supply held in this country and Canada, as compared with preceding monthly periods:

	1902.	1901.	1900.
July 1.....	29,511,000	41,047,000	64,966,000
October 1.....	48,954,000	60,025,000	66,279,000
November 1.....	68,199,000	71,878,000	92,221,000
December 1.....	82,238,000	93,009,000	96,648,000

The increase since July 1 is thus shown to have been 38,688,000 bushels to Nov. 1, as against an increase of 51,962,000 bushels in the same time last year. The stock on hand Nov. 1, as compared with amount on hand at same date in previous years, was:

	East of Rockies.	Pacific coast.	Totals, U. S.
Nov. 1, 1902.....	63,480,000	4,719,000	68,199,000
Nov. 1, 1901.....	64,616,000	7,262,000	71,878,000
Nov. 1, 1900.....	82,238,000	9,648,000	92,221,000

The total stock is shown to be still 3,679,000 bushels less than was held a year ago, 24,022,000 bushels less than November 1, 1900, and 20,000,000 bushels less than in 1899. With two exceptions, in fact—Nov. 1, 1898, and 1897—the present stock is the smallest held on that date in nine years. On Nov. 1 there was a total stock in and about for Europe of 69,400,000 bushels. The combined American and European stocks are shown in the following table of number of millions of bushels:

	1902.	1901.	1900.	1899.	1898.	1897.	1896.
July 1.....	65	118	125	119	78	124	124
Oct. 1.....	109	135	154	134	87	95	127
Nov. 1.....	137	189	166	159	88	111	162
Dec. 1.....	187	170	166	166	106	127	172

As the total supply of any stock available to one's market is the first consideration in marketing to good advantage, though not the only one, these figures are of interest. The visible supply of grain Saturday, December 6, as compiled by the New York Produce Exchange, is as follows: Wheat, 45,940,000 bushels; corn, 3,895,000 bushels; oats, 6,655,000 bushels; rye, 1,311,000 bushels; barley, 3,674,000 bushels. The harvest of the Argentine, S. A., crop will influence the world's wheat market, particularly speculative, for the next few weeks. Chicago advices of Dec. 3 say: "Northwestern stocks are small—14,000,000 bushels less than in 1901 in country elevators. The Manitoba crop is not so large as expected, and but a small quantity of it remains unmarketed. Then there is the Pacific demand for the Orient and Australia, so the situation is decidedly cheerful all around."

The area reported as probably sown for

next year's crop in Kansas is 6,020,103 acres, being a decrease of 234,644 acres, or 3.7% below last year's sowing, which was much the largest ever reported. The soil and weather conditions for prosperity have been unusually favorable. There are over 7000 grain raisers in Kansas organized and owning their own elevators and doing business organizedly in marketing.

APPLES.—In response to the demands of the growers of Nova Scotia for improved shipping conditions for apples to Europe, the Furness line has equipped three of its steamers with a system of ventilating and cooling by means of fans, driven by electric dynamo, and experiments are now under way. A Liverpool dealer's circular letter says that the total importation of American apples to November 1 this year was 448,049 barrels, as against 625,626 in 1901, while the New York Fruit Trade Journal, which is assisting the bears on the price of the apple crop in the East, says the figures are 235,382 for 1901 and 879,619 for 1902. Which proves the truth of what a well-known assistant in the taking of the United States census once said, that "statistics are like Bologna sausage—the more you know about how they are made the less confidence you have in them."

Paonia, Colo., and vicinity has become one of the most important fruit growing sections of the country. Every acre of land that can be made to produce fruit is being planted to trees of the choicest varieties. It is estimated that this season's crop will reach 500,000 boxes. The bulk of this goes East, where the Paonia fruit is in demand and greatly sought after. Porter Bros. Co. of Chicago have purchased 25,000 boxes of winter apples from the Association at \$1 per box, besides quantities of peaches, pears and other fruits. Other buyers have also purchased heavily.

From the Pacific to the Atlantic, but particularly in the Middle West States, there is a controversy over the desirability of the Ben Davis apple.

Lake County Bee: D. W. Price has already purchased and shipped over 1200 boxes of fine apples and expects to secure nearly as many more. This is only an experiment, for it has always been believed that it would not pay to ship apples by wagon over the mountain, but should it turn out to be a success, financially, next year he will probably establish packing houses in both Lakeport and Kelseyville. Some of these apples were forwarded to the San Francisco market.

CITRUS FRUITS.—Monrovia Messenger: The last sixty days have been the most satisfactory like period in the history of the lemon industry of this section. Fifty carloads have been sold by the Ontario-Cucamonga Exchange in that line for an average price of \$800 a carload.

This week two cars of oranges will be shipped from the Campbell orchard at Gridley, Butte county. This is the first carload shipment of oranges ever made from Gridley, and marks an epoch in the history of the industry in that section. George Gifford of Butte, Mont., has purchased the crop of the Campbell orchard as well as those of R. C. Long, L. T. Allen and J. H. Jones for the Butte market.

Associations of organizations of citrus fruit raisers are being formed to maintain f. o. b. auction sales in California.

New York Fruit Trade Journal: Firms in Western States have, it is reported, secured most of the Florida fruit, in which there is little fancy.

PRUNES AND EXPORTS OF THEM.—The Alden Anderson Fruit Co. of Suisun got the Capay valley, Yolo county, prunes—275 tons.

Some Gridley and Biggs growers got badly caught in their prune drying.

Visalia Times: Fleming & Jacob during the season forwarded several carloads of fruit to Copenhagen, Denmark, Dusseldorf, Antwerp and London. Mr. Nunnemaker states that he has so far this season shipped about thirty-four cars, all but three of which have been to European points. The Downing Fruit Co.'s packing house has shipped to date in the neighborhood of 150 cars, three-fourths of which number have been exported. About 3000 tons of prunes have been purchased to date.

The Association cases against Healdsburg growers have been set for February. Perhaps the receivership may alter matters a little.

STOCK AND MEATS.—The Breeders' Gazette, probably the most ably conducted paper in that line in the United States, says "an immense meat crop from Iowa is looked for this coming winter and spring." In Texas there is a deadlock between cattlemen and cottonseed millers over the price of cottonseed meal and hulls from the latter, and so few steers were on such feed up to November 26 that the situation was serious. The millers

ascribe their high prices to high prices paid for cottonseed. American capitalists have purchased nearly 4000 square miles of territory in Mexico, extending along the border for 159 miles from a point 16 miles west of El Paso, Texas, for \$1,000,000, for a breeding ground for cattle, and for this purpose will place from 7500 to 10,000 cows upon the land the coming season.

HAY.—San Benito Advance: Hollister is face to face with a serious situation. Vast quantities of hay are piled up in the warehouses and no facilities are at hand for shipment to a booming market. A hundred tons daily for the next five months would not get the hay out of the warehouses before the new crop comes in, and yet the number of cars furnished by the railroad company does not average three a week. The largest shippers of hay in the State are located at Hollister. They may conclude to haul by wagon and ship by boat.

N. Y. Tribune: Nothing has developed to modify the strong figures for hay which have held such an extended rule since the new crop was put upon the market. Strictly prime is still quoted at \$20 a ton spot, and near arrival.

POTATOES.—The Fin de Siecle Co. sold nearly 640 acres near Atwater, lately, in small tracts for sweet potato growing. Homes will be erected on many of them.

Stockton Record: J. B. Meloche, returning from a tour of the Southern States in the interests of the island potato producers association, states that 500 carloads of tubers can be disposed of throughout the South during the first month if reduced freight rates can be secured from the railroad companies—a very important qualification.

HOPS.—The Pajaronian says: The entire valley hop crop sold as soon as it was baled at 25 cents a pound.

Ukiah Press-Democrat: The local hop market is unsettled. No sales are reported since our last. The buyers stand ready to do business, but holders are figuring on from 27 1/2 to 30 cents and buyers seem not ready to meet these figures. We hear of two sales in Sonoma county at 28 and one at 30 cents, but are not certain the report is correct.

WINE.—The Union Wine Association, a new one, apparently having its inception in the minds of Eastern capitalists and organized in Los Angeles, it is announced will open offices there and in San Francisco, and is negotiating for wineries in both parts of the State. The president, Geo. P. Kaufman, says he believes that there is a future for California wines sold true to label, and the Union Association will proceed along that line.

POULTRY.—Pajaro valley people absorbed some 400 pounds of turkey on Thanksgiving shipped in from Winfield, Kan. Thirteen tons of turkeys were shipped to San Francisco from Corning for Thanksgiving, but that is less than the shipments of last year by four tons. The Christmas shipments this year will be far greater than formerly. About five tons of dressed turkeys have been shipped from Lincoln during the past few weeks.

CANNERY MATTERS.—It is reported and denied that the Association will materially increase the capacity of its plant at Yuba City. Also reported that R. W. Skinner may consent to act as manager for a new cannery to be started there by other interests. There is a movement for co-operative or independent canneries in Sonoma county.

OLIVES.—The olive crop in the vicinity of Corning is turning out better than at first expected. The increased size of the berries almost makes up for the decrease in the crop.

J. Ramesdale has shipped ten tons of olives from the Ablers ranch, Elsinore, to San Diego for pickling. They sold at \$90 per ton.

DRIED FRUITS AT SAN JOSE.—Mercury: Dried apricots and peaches are a very scarce article in any of the local packing houses at the present time. They have been almost entirely cleaned out and for very high prices. Inquiry at several of the packing houses revealed this state of affairs. Other dried fruits were also reported as being very scarce.

CORN.—Independent, Yuba City: Much of the corn crop on the tules and in No. 70 that was supposed to be lost has been harvested, and yields better than was expected. Potatoes and beans were mostly lost.

PERSIMMONS.—Sanger Herald: A firm of Kings River fruit growers is shipping large quantities of persimmons to San Francisco and realizing good prices for the fruit.

SEEDED RAISINS.—It is estimated that 2000 cars of raisins have been seeded in the Fresno district this season, which is an increase of 100% over last year's output.

San Francisco Produce Report.

SAN FRANCISCO, Dec. 10, 1902.

RECEIPTS AND EXPORTS.

Nothing shows better the true condition of trade in various lines than the receipts and exports. Receipts at this point for the past week to date in some lines have been as follows:

Receipts of produce from California interior for week were:

Flour, 4 sacks.....	113,657	Onions, sacks.....	3,778
Wheat, centals.....	31,275	Wool, bales.....	335
Barley, centals.....	58,455	Broomcorn, bbls.....	90
Oats, centals.....	5,420	Hops, bales.....	28
Corn, centals.....	3,195	Alfalfa Seed, sks.....	155
Buckwheat, sacks.....	270	Hides, No.....	5 8 6
Beans, sacks.....	18,021	Pelts, bbls.....	4,916
Hay, tons.....	1,639	Wine, gals.....	416,159
Potatoes, sacks.....	28,855		

From Oregon:

Flour.....	25,452	Flaxseed, sks.....	514
Oats.....	2,240	Potatoes, sks.....	1,187

From Washington:

Flour.....	21,542	Flaxseed, sks.....	11,600
Oats.....	12,542	Potatoes, sks.....	3,438

From Australia:

Wool, bales.....	3,368	Corn, centals.....	400
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The exports of wheat from San Francisco during the month of November were as follows:

To—	Centals.	Values.
Great Britain.....	239,564	\$358,454
Australia.....	278,341	\$94,029
South Africa.....	65,301	\$2,250
Hawaiian Islands.....	2,015	\$2,925
Central America.....	1,352	\$2,010
Elsewhere.....	46	73

Totals..... 636,619 \$849,741

The exports in November, 1901, exclusive of the shipments to the Hawaiian Islands, were 1,130,582 centals, valued at \$1,142,492.

In November the exports of barley from this port were:

To—	Centals.	Values.
Great Britain.....	236,168	\$288,472
Australia.....	121,877	\$49,154
Hawaiian Islands.....	49,452	\$1,607

Totals..... 408,197 \$839,293

In November, 1901, the exports, omitting the Hawaiian Islands, were 739,944 centals, valued at \$670,091.

A table given elsewhere of figures prepared by the San Francisco Produce Exchange officers for its members shows the quantities of California grains on hand Dec. 1 of each year for several years back, as well as this year. Following are the figures for this year alone:

	Dec. 1, 1901.	Dec. 1, 1902.
Wheat, ctls.....	12,023,680	6,154,060
Barley, ctls.....	4,467,300	2,947,040
Oats, ctls.....	304,520	343,460
Beans, sacks.....	176,874	752,874
Rye, ctls.....	168,480	53,740

WHEAT.

The local statistics of quantity of wheat, taken with those on the world's supply, seem to justify the expectation of higher prices in this market, especially when the Australian and African demand is considered. California, which is exceptionally situated, had but little more than half the usual supply of wheat owing to the unusual shortness of the heads in the grain of this year, and has almost no stock in excess of the usual home demand, which is likely to be greater than usual on account of the influx of population, with which to meet the export demand natural to San Francisco. The only natural element against higher prices for wheat in this market is shipments from the Pacific Northwest to this market. Of the twenty-six vessels on the engaged list for grain, thirteen are for Australia and twelve for Great Britain or Europe, Australian charter prices being from 10s 6d to 15s, according to time of charter; for Great Britain, 11s 3d for present contracts to 30s for prior. The decline in charter prices has helped exporters to secure new markets.

Trouble between dealers over claimed inferior quality of wheat delivered by the Big Four on December settlements has been a feature of the local situation the past week and is under investigation. The principal operators seem to have had wheat of some quality to turn over to satisfy their December accounts, and the recent purchases of grain at Williams were more than twice enough in quantity to enable them to do that if made for their account, as it is believed they were. A considerable difference in cash quotations on wheat in San Francisco and in the country has continued during the past week, which has made the reports of this market by various papers contradictory of each other. Our figures give the entire range:

No. 1 White.....	\$1 37 1/2 @ 1 45
Milling.....	1 42 1/2 @ 1 48 1/2

SAN FRANCISCO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	No sales	1 40 @ 1 38 1/2
Thursday.....	1 35 @ 1 35	1 39 @ 1 38
Friday.....	No sales	1 37 1/2 @ 1 36 1/2
Saturday.....	1 35 @ 1 35	No sales
Monday.....	1 35 @ 1 37 1/2	No sales
Tuesday.....	No sales	1 38 1/2 @ 1 39 1/2
Tuesday, for December, 1903.....		1 21

BARLEY.

Barley has been the fluctuating grain, so far as concerns prices in contracts to be settled in the future.

BARLEY FUTURES.

	Dec	May
	Opened	Closed
Wednesday.....	1 25 @1 24	1 29 1/2 @1 28 1/2
Thursday.....	No sales	1 27 1/4 @1 26 1/4
Friday.....	1 22 1/4 @1 22 1/4	1 25 1/4 @1 26 1/4
Saturday.....	1 26 1/4 @1 26 1/4	No sales
Monday.....	1 26 1/4 @1 27 1/4	No sales
Tuesday.....	No sales	1 28 1/4 @1 28

Cash prices have, however, decidedly receded from those of a week ago, and are now:

Feed, fair to good.....	1 22 1/4 @1 26
Brewing and shipping.....	1 27 1/4 @1 37
Chevalier, fair to choice.....	1 55 @1 60

OATS.

The market has moved up materially. Present quotations are:

White Oats.....	1 27 1/4 @1 40
Black, for feed.....	1 20 @1 25
Black, for seed.....	1 27 1/4 @1 35
Red, common to choice.....	1 22 1/4 @1 30
Red, fancy.....	1 27 1/4 @1 32 1/2

CORN.

Large White, good to choice.....	@1 50
Large Yellow.....	1 30 @1 50
Small Yellow.....	1 50 @1 60
Egyptian, Brown.....	1 15 @1 25
Egyptian, White.....	1 25 @1 35
Western, sacked, yellow.....	1 30 @1 35
Western, sacked, white.....	1 32 1/2 @1 35

RYE

Good to choice.....	1 07 1/2 @1 10
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BUCKWHEAT.

Good to choice.....	1 75 @2 10
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FLOUR.

California, Family Extras.....	4 20 @ 4 45
Bakers' Extras.....	4 10 @ 4 20
Oregon and Washington, Family.....	3 50 @ 3 75
Bakers'.....	3 50 @ 4 00

FEEDSTUFFS

Millers' prices to wholesale dealers:	
Bran, 100 lbs.....	19 00 @20 00
Middlings.....	22 00 @24 00
Shorts, California.....	21 50 @22 50
Barley, Rolled.....	25 00 @26 00
Cornmeal, coarse feed.....	30 00 @31 00
Cracked Corn.....	30 50 @31 50

HAY AND STRAW.

Local demand is light, supplies lighter, and prices greater. Some dealers quote 50c higher than below on some kinds.

Choice Wheat Hay.....	14 50 @15 00
Good Wheat Hay.....	13 50 @14 50
Other grades same.....	11 00 @13 50
Wheat and Oat.....	11 50 @14 00
Tame Oat.....	11 00 @13 00
Second Quality Oat.....	9 00 @11 00
Barley and Oat.....	8 00 @11 00
Alfalfa.....	9 00 @11 50
Straw, 1/2 bale.....	45 @ 65

BEANS.

As far as dealers here in town are concerned, beans are held in firm hands and at firm prices, although the movement is light and likely to continue so until after the holidays. Then there will naturally be increased activity with upward tendency in prices.

Prices to producers for choice round and earload lots on wharf, city:

Pea, 100 lbs.....	3 00 @3 25
Small White.....	3 15 @3 30
Lady Washington.....	2 75 @3 10
Pinks.....	2 40 @2 75
Bayos.....	2 60 @2 85
Red Kidney.....	4 00 @4 50
Limas.....	4 25 @4 35
Black-eye Beans.....	3 85 @4 10
Garbanzos, large.....	2 50 @2 85

PEAS.

For choice stock in city dealers are paying:

Green Peas, California.....	1 50 @1 65
Niles Peas.....	1 75 @2 25

SEEDS.

There is perhaps no change in purchasing prices of alfalfa seed, but sales this week at \$12.50 per ton in the store are reported.

For choice seed to producers, dealers quote:

Alfalfa, Cal.....	10 50 @11 50
Flax.....	2 @ 2 1/4

The following are selling at:

Canary, in original packages.....	4 1/4 @ 4 1/4
Rape.....	2 @ 2 1/4
Hemp.....	4 @ 4 1/4

POTATOES.

River Burbanks have improved in price, reaching 45c to 50c per 100 to producers. In a commission way, potatoes are now selling at

Burbanks, Salinas, 1/2 cental.....	1 30 @ —
River Burbanks, good to select, 1/2 cental.....	60 @ 75
River Reds, nominal, 1/2 sack.....	— @ —
Sweet Potatoes, 1/2 cental.....	1 25 @ 1 40
Oregon.....	1 00 @ 1 15

VEGETABLES.

Los Angeles, in the main, is now supplying this market in most lines of garden truck, and quotations are changed accordingly.

Commission merchants report realizing for:

Beans, Lima, 1/2 lb.....	6 @ 7
Beans, String, 1/2 lb.....	10 @ 12 1/2
Beans, Wax.....	9 @ 11
Cabbage, choice garden, 100 lbs.....	50 @ 75
Celery, Los Angeles, 1/2 doz.....	50 @ —
Sprouts.....	5 @ —
Egg Plant.....	8 @ 10
Garlic, 1/2 lb.....	2 @ 2 1/2
Onions, large select, 1/2 cental.....	75 @ 1 00
Peas, Sweet garden, 1/2 lb.....	5 @ 6
Peppers, Chile, 1/2 box.....	60 @ 75
Peppers, Bell, 1/2 box.....	60 @ 75
Squash, Summer.....	1 25 @ 1 50
Squash, Marrowfat, 1/2 sack.....	40 @ 50
Squash, Hubbard, 1/2 sack.....	40 @ 50
Yellow Pumpkins, Eastern, 1/2 sack.....	50 @ 65
Tomatoes, 1/2 large box.....	75 @ 1 50
Rhubarb, 1/2 lb, 4@5c; 1/2 box.....	1 25 @ 1 50

LIVE STOCK AND MEATS.

Prices for hogs are now a little firmer on account of light supplies.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, 1/2 lb.....	7 @ 7 1/2
Beef, cows.....	6 @ 7
Veal, large, 1/2 lb.....	7 1/4 @ 8 1/4
Veal, small, 1/2 lb.....	8 1/4 @ 9 1/4
Mutton—ewes, 8@9c; wethers.....	8 1/4 @ 9 1/4
Lamb, 1/2 lb.....	9 1/4 @ 10
Hogs, dressed.....	8 1/2 @ 9 1/2

Dealers are quoting prices to producers for first quality live stock, less 50% shrinkage on cattle, delivered at city slaughter houses, as follows:

Cattle—Steers.....	8 1/4 @ 9
Cows and Heifers.....	7 @ 7 1/2
Thin Cows.....	4 @ 5
Calves, large.....	4 1/2 @ 5
Calves, light (gross weight).....	5 @ 5 1/2
Sheep—Ewes (gross weight).....	3 1/4 @ 3 1/2
Wethers.....	3 1/4 @ 4
Lambs, yearlings, 1/2 lb (live weight).....	4 @ 4 1/4
Hogs, bard grain fed, 150 to 250 lbs.....	6 1/2 @ 6 1/4
Hogs, small, fat.....	6 @ 6 1/2
Hogs, large, bard, over 250 lbs.....	6 @ 6 1/2
Hogs, feeders.....	5 1/2 @ 5 1/2
Hogs, country dressed.....	7 1/4 @ 7 1/2

GAME.

Continues in liberal supply at prices same as last week, except 50c per dozen more for Mallards and less for large Brants and 25c more for Widgeon.

POULTRY.

Market is sluggish and likely to remain so at least until up to Christmas Day, except as to turkeys, a good demand for which (with rater light supply) and satisfactory prices is expected for the Christmas celebration, when chickens will naturally be neglected in every way. The week after Christmas is expected to be a good one for choice chicken poultry. This market has continued this week to be heavily loaded with Eastern stock, and there will be four or five cars of it in next week.

Small broilers should weigh from 1 1/2 to 2 lbs.; large broilers, 2 to 2 1/2 lbs.; fryers, 2 1/2 to 3 lbs. at the highest; all over that go as young roosters if they have no spurs and the breast bone is soft.

Turkeys, alive, choice young.....	16 @ 18
Turkeys, alive, Hens, 1/2 lb.....	16 @ 18
Turkeys, alive, Gobblers, 1/2 lb.....	16 @ 18
Turkeys, dressed, hens.....	18 @ 21
Turkeys, dressed, gobblers.....	18 @ 22
Hens, California, 1/2 dozen.....	5 00 @6 00
Roosters, old.....	4 50 @5 50
Roosters, young (full-grown).....	5 00 @6 00
Fryers.....	4 50 @5 50
Broilers, large.....	4 00 @5 00
Broilers, small to medium.....	3 00 @4 00
Ducks, old, 1/2 dozen.....	4 00 @4 50
Ducks, young, 1/2 dozen.....	5 00 @6 00
Geese, 1/2 pair.....	1 50 @2 00
Goslings, 1/2 pair.....	1 50 @2 00
Pigeons, old, 1/2 dozen.....	1 00 @1 25
Pigeons, young.....	1 75 @2 25

BUTTER.

Quotations from some, perhaps most, houses are a little lower than those here given—say 1c; but we cannot say that there is any lower tendency.

Commission merchants quote as returning for:

Creamery, extras, 1/2 lb.....	31 @32
Creamery, firsts.....	30 @31
Dairy, select.....	29 @30
Dairy, firsts.....	27 @28
Dairy seconds.....	25 @26

EGGS.

Eggs, however, have a somewhat downward tendency.

Commission merchants quote as returning for:

California, select, large, white and fresh.....	36 @38
California, select, irregular color & size.....	31 @35
California, good to choice store.....	25 @30
Eastern.....	27 @28

CHEESE

Commission merchants quote as returning for:

California, fancy flat, new.....	15 @16
California, good to choice.....	14 @14 1/2
California, "Young Americas".....	15 @16
Eastern.....	15 @17

HONEY AND BEESWAX.

Some dealers quote white comb honey a little higher

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.....	6 @ 6 1/4
Extracted, Light Amber.....	4 1/2 @ 5 1/4

Extracted, Amber.....	4 @ 4 1/4
White Comb, 1 lb frames.....	11 @12
Light Amber.....	9 @10
Dark Comb.....	5 @ 6 1/4
Beeswax, Good to choice, light, 1/2 lb.....	26 @27 1/4
Strictly fancy light.....	29 @30

HOPS.

The local and Eastern condition remains in every way stagnant at this date.

Buyers are paying for:

Washington and Oregon.....	25 @26
Sacramento.....	24 @25
Russian River.....	24 1/2 @25
Sonoma.....	25 @27

WOOL.

Dealers' prices are:

Humboldt and Mendocino.....	12 @15
Mountain, free.....	10 @12
Plains, defective.....	7 @ 9

BAGS AND BAGGING.

Jobbing quotations are:

Calcutta Grain Bags, buyer June-July.....	5 1/2 @ 5 1/2
Calcutta Grain Bags, spot.....	5 1/2 @ 6
San Francisco Grain Bags, 22x36, spot.....	5 1/2 @ 5 1/2
San Quentin Bags, 100.....	5 55 @ —
Wool Sacks, 4 lbs.....	34 @35
Wool Sacks, 3 1/2 lbs.....	31 @32
Fleece Twine.....	7 1/4 @ 8
Gunnies.....	13 @14
Bean Bags.....	4 1/2 @ 5
Fruit Sacks, cotton, three qualities.....	6, 6 1/4, 7
Fruit Sacks, Jute.....	6 @ 7 1/4

FRESH FRUITS.

Apples, pears, oranges, persimmons and bananas are plentiful in this market, but trade is dull and stocks accumulating. Grapes have ceased to arrive.

Commission merchants are realizing for:

Apples, fancy, 1/4 4-tier box.....	75 @ 1 25
Apples, good to choice, 1/2 50-lb. box.....	50 @ 75
Apples, common to fair, 1/2 50-lb. box.....	25 @ 50
Raspberries, 1/2 chest.....	6 00 @11 00
Pears, Winter Nellis.....	50 @ 1 25
Pears, other kinds, 1/2 box.....	40 @ 75
Persimmons, 1/2 box or crate.....	50 @ 60
Pomegranates, according to box.....	90 @ 2 25
Quinces, 1/2 box.....	40 @ 60
Strawberries, Longworth, 1/2 chest.....	13 00 @15 00
Strawberries, Large, 1/2 chest.....	2 50 @ 4 00

DRIED FRUITS.

Quotations here do not show such a rise in prune prices as those appearing East and elsewhere. We presume the reason is that those who have rain-damaged stock are willing to part with it at a reduction; but there is not enough of this stock to affect Eastern or other markets.

Jobbing quotations are:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, fancy.....	6 1/4 @ 7
Apples, standard to choice.....	4 1/2 @ 6
Apples, sun-dried.....	4 @ 4 1/4
Apricots, Moorpark.....	8 1/2 @13
Apricots, Royal, good to choice, 1/2 lb.....	5 1/2 @ 7
Apricots, Royal, fancy.....	7 1/2 @ 8
Figs, 10-lb. box.....	75 @1 15
Nectarines, 1/2 lb.....	5 @ 6
Peaches, unpeeled, fancy.....	6 @ 7 1/2
Peaches, unpeeled, choice.....	4 1/4 @ 5 1/2
Pears, halves.....	5 @ 9 1/2
Pears, quarters.....	3 1/2 @ 4 1/4
Plums, pitted.....	5 @ 6
Plums, unpitted, 1/2 lb.....	1 1/4 @ 2 1/4
Prunes, Silver, good to fancy.....	4 1/2 @ 7
Prunes, in bags, 4 sizes, 2 1/4 @2 1/4; 40-50s, 5 1/4 @5 1/4; 50-60s, 3 1/4 @3 1/4; 60-70s, 3 @3 1/4; 70-80s, 2 1/2 @2 1/2; 80-90s, 2 @2 1/4; 90-100s, 1 1/4 @1 1/4	
Figs, White, in bulk.....	6 1/4 @ 7
Figs, Black, in sacks, 1/2 lb.....	4 1/4 @ 5 1/4

RAISINS.

California Raisin Growers' Association prices, f. o. b., common shipping points, crop of 1902: No. 2 crown Loose Muscatels, 50-lb boxes, 5 1/4 c 1/2 lb; No. 3 crown do, 5 1/4 c; No. 4 crown do, 6c; Seedless do, 5c; Seedless Sultanias, 5c; Seedless Thompsons, 5 1/4 c; No. 2 crown London Layers, 20-lb boxes, \$1.40 1/2 box; No. 3 crown do, \$1.50; No. 4 crown Fancy Clusters do, \$2; No. 5 crown Dehesas do, \$2.50; No. 6 crown Imperials do, \$3.

CITRUS FRUITS.

Stock to a considerable extent, and prices more so, are at a standstill pending the starting up of the auction Monday next, the 15th.

Commission prices:

Oranges, Navels, fancy, 1/2 box.....	2 50 @3 00
Oranges, Navels, choice.....	1 50 @1 75
Oranges, Seedlings.....	1 25 @1 50
Tangerines, according to box size.....	60 @1 50
Jaffas.....	1 25 @1 50
Lemons—California, fancy, 1/2 box.....	2 00 @2 50
California, choice.....	1 25 @1 50
California, standard.....	1 00 @1 25
Limes, Mexican, 1/2 box.....	4 00 @4 50
Grape Fruit.....	2 00 @3 00

NUTS.

Jobbing prices are:

California Almonds, shelled.....	23 @26
California Almonds, paper shell, 1/2 lb.....	10 1/4 @11 1/4
California Almonds, soft shell.....	7 1/4 @ 9
California Almonds, bard shell.....	4 1/4 @ 5 1/4
Peanuts, California, fair to prime.....	4 1/4 @ 5 1/4
Peanuts, Eastern, hand-picked.....	6 @ 6 1/4
Walnuts, soft shell, 1/2 lb.....	11 1/4 @13
Walnuts, standard, 1/2 lb.....	9 1/4 @11 1/4

LARGE SALE OF HORSES.—At Elmhurst, December 6 and 7, E. B. & A. L. Stone Co. put up 300 draft horses and mules at auction.

Sometimes a cold settles in the bowels. The pain pierces like a lance. Get rid of it promptly by taking Perry Davis' Painkiller in sweetened water. There is but one Painkiller, Perry Davis'. Refuse substitutes.

GRAIN STOCKS IN FIVE YEARS.

The following table, prepared by the S. F. Produce Exchange, shows the quantities of California grains on hand Dec. 1 of each year for several years back, as well as this year:

	1898.	1899.	1900.
Wheat, cts.....	6,494,800	15,998,280	12,401,980
Barley, cts.....	1,264,200	4,778,880	3,893,840
Oats, cts.....	186,000	235,700	200,280
Rye, cts.....	38,440	54,140	151,040
Beans, sacks.....	513,459	268,117	243,034

	1901.	1902.
Wheat, cts.....	12,023,680	6,541,060
Barley, cts.....	4,467,300	2,947,040
Oats, cts.....	304,520	343,460
Rye, cts.....	168,480	53,740
Beans, sacks.....	476,874	752,874



300

pounds



KENDALL'S SPAVIN CURE

The Old Reliable Remedy
for Spavins, Ringbones, Splints, Curbs and all forms of Lameness. The use of a single bottle may double the selling price of your horse.

WORTH \$100 TO THIS MAN.
Dr. B. J. Kendall Co., Gentlemen:—I have cured a Curb Spavin of one year's standing, and nearly removed all signs of it with two bottles of Kendall's Spavin Cure. I would not take \$100 for what it has done for me.
C. L. MARVIN, Cedar Run, Pa., Nov. 12, 1900.

Thousands of men report equally good or superior results from its use. Price, \$1; six for \$5. As a liniment for family use it has no equal. Ask your druggist for Kendall's Spavin Cure, also "A Treatise on the Horse," the book free, or address
DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

Patrons of Husbandry.

Tulare Grange.

Tulare Grange held on Saturday its birthday and semi-monthly meeting. The meeting was well attended and more than good, the dinner was excellent. Many invited guests were present and a good social time was had and enjoyed by members and friends.

The business portion of the meeting was deferred until after the dinner, when the following officers were elected to serve for the ensuing year: F. H. Styles, Master; Morpheus Jacob, Overseer; John Twohy, Lecturer; E. C. Shoemaker, Steward; R. B. Holcomb, Assistant Steward; Sister P. P. Styles, Chaplain; Julius Forrer, Treasurer; Bertha I. Morris, Secretary; A. J. Woods, Gate Keeper; Amanda Swanson, Pomona; Jennette J. Fowler, Flora; Ara Archer, Ceres; Sarah Gill, Ladies' Assistant Steward; Sister F. H. Styles, Organist; Brother E. C. Shoemaker was appointed Assistant Secretary.

Owing to the length of time taken at the dinner and the election of officers, the subject of the day, "What systematic effort can be made in this Grange the coming year that will increase the efficiency of its educational work?" was not discussed.

Brother E. C. Shoemaker read extracts from the report of the National Master at the late National Grange in Lansing, Mich., at which thirty States and Canada were represented.

During the past year Michigan organized ninety new Granges and reorganized fourteen old ones. Michigan has 550 Granges and 35,000 membership, while New Hampshire has 100,000 members. The largest membership and greatest number of Granges in any one State is in New York. During the past year the State Grange of Michigan received into its treasury, as its per cent of membership fees and dues, \$18,000, and \$2000 as its per cent on sales from Grange purchasing stores.

Two questions were drawn from the question box: First, "Under what system of sales can prune growing be made profitable to the grower?" Second, "Will Tulare county support, profitably, more stock than is now in it?" To the first it was admitted the present system of disposing of the crop is absolutely ruinous. It was reported, that by reason of the failure of the Cured Fruit Association, the loss this year to the prune growers of California will exceed \$2,000,000. This loss results from the want of a central controlling agency to regulate sales and prices, and a crazy rush on the part of some large growers to make sales before it could be known, absolutely, what the crop would be, these sales being made at prices a half to three-fourths of a cent lower than even packers anticipated, than the then condition of the market justified or will pay the grower a fair remuneration for his labor. Did the prune growers of Cali-

fornia this year have an organized system of sales, there is no reason why prunes should not have readily sold on a 3 cent basis, a price less than which does not pay the prune grower. Whatever others may think or say, the members of Tulare Grange can see no hopes for better remuneration for prune growers until thorough association of growers and absolute co-operation of sales has been adopted by them. When this time and system comes, profit to the grower will also come. Until co-operation and association is adopted there will be no profit for the grower. It behooves every prune grower in the State, true to his own interest, the industry and the best interest of California, to advocate and promote association and co-operation. Without this very many will be and had better be forced out of the business.

To the second question it was agreed there is now in Tulare county fully one-third more stock, cattle and hogs particularly, than there ever was before. They are still being brought in by thousands evidently under the impression that more stock will find support. At this time of year stock have never been in better condition, and this results from better management and better provisions for their support. Yes, Tulare county can support more stock than is now in it.

The subject for next meeting is: "A youth is more likely to succeed if he chooses his own career without paternal influence."

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has never been appreciated as it is at the present time. This being a fact, I look upon the success of my Health Tablets as evidence that honesty is what the people want. This remedy has been advertised very little, but the goods, being honestly made, have been recommended by people until the sales run into the millions. I have confidence in mankind as I have in my remedy, and I believe that if I treat you fairly you will treat me the same. I have taken chances in thousands of cases of dealing with people whom I trusted to their honor to pay me after they have been convinced that my remedy is all that I claim for it. I am now going to make the same liberal offer to you. Just drop me a postal card and I will send you a full size package of my Health Tablets and you need not pay for them until you are thoroughly satisfied that they are the best remedy you have ever tried, for the ailments for which I recommend them. It is a common saying: "Take Baldwin's Health Tablets to-night and you will be well to-morrow." It is true, so write me to-day and I will endeavor to send you the tablets to-morrow.

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Matty Clay's Aaggie 2d.	499	7 "	23.15 oz.	Minnewawa Salambo, 3 teats	403	4 "	16.1 "
Ruda 2d Belle	401	7 "	20.9 "	Mountain Juliet	382	7 "	15.9 "
Minnewawa Lily	364	4 "	20.4 "	Lady Kurts Alpa	378	6 "	15.3 "
De Kol of Valley Mead	435	3 "	19.9 "	Corona Acturas	344	2 "	14.1 "
Wynetta Princess	391	2 "	18.7 "	Segriss Pietertje De Kol 2d.	355	2 "	12.11 "
Minnewawa Louise	474	3 "	18.5 "	Western Princess	294	3 "	12.11 "
Drusa	399	5 "	18.4 "	Painted Lady	327	3 "	12.10 "
Wakalona	393	5 "	18.3 "	Mary Ann De Kol	391	3 "	12.10 "
Olympia Clay	526	6 "	18.2 "	Miranda Acturas	325	3 "	12.3 "
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FOR THE WEEK ENDING NOVEMBER 25, 1902.

- 714,631.—AIR BRAKES—E. M. Barnes, Sacramento, Cal.
 714,357.—CONVEYER—H. W. Blaisdell, Yuma, Ariz.
 714,633.—DINNER PAIL—J. T. Bluff, Seattle, Wash.
 714,279.—CONVEYER—M. Bradfield, Los Angeles, Cal.
 714,278.—CONVEYER—M. Bradfield, Los Angeles, Cal.
 714,140.—HAND TRUCK—E. J. Bryan, Riverside, Cal.
 714,449.—CONVEYER—G. C. Carson, Redding, Cal.
 714,450.—TREATING METAL—G. C. Carson, Redding, Cal.
 714,451.—CONVEYER—G. C. Carson, Redding, Cal.
 714,287.—HOD—J. Dorey, Seattle, Wash.
 714,467.—OIL BURNER—M. A. Fesler, Visalia, Cal.
 714,180.—ENGINE—C. Hendricks, Riverside, Cal.
 714,374.—MOP WRINGER—W. W. M. Hickey, S. F.
 714,375.—BED COUCH—J. Hoey, S. F.
 714,307.—SUSPENDERS—A. N. Johnson, Seattle, Wash.
 714,378.—ROTARY HARROW—H. F. Jurs, Benicia, Cal.
 714,585.—FAUCET—A. J. Ketelsen, Seattle, Wash.
 714,587.—COIN APPARATUS—G. F. Lehrk, S. F.
 714,203.—GRAIN ELEVATOR—Levy & Anderson, Liberty, Ariz.
 714,386.—BAG MACHINE—J. V. Matteson, S. F.
 14,316.—MUSIC CHART—C. F. Meredith, San Diego, Cal.
 714,394.—OIL BURNER—Pfaff & Staples, S. F.
 714,337.—OILER—G. W. Thurston, Kern, Cal.
 714,539.—SEALING JARS—W. Walter, Shelton, Wash.
 714,330.—STILL—Warren & Healy, Fort Thomas, Ariz.
 714,416.—PUMP—A. W. Weaver, El Verano, Cal.

WAS GOING TO CHANGE HIS CROP.—A prominent saloon keeper of Modesto went down the other day to Ceres, where C. N. Whitmore is selling land in colony lots with a liquor prohibition clause in the deeds. Mr. W., in an interview with him, asked him if he was not aware that a restrictive clause prohibiting the manufacture and sale of intoxicants went with every land deed. "Yes," replied Mr. D., "I am well aware of the fact. Instead of trying to raise hell I intend to raise alfalfa." He purchased.

What was probably the most valuable carload of farm products shipped from this State this year was a car of almonds consigned to Chicago from E. A. Ellsworth's drier at Niles, Alameda county, last week. It contained 710 boxes shelled almonds valued at not less than \$10 a box.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

Pomona Progress: A new organization of citrus fruit growers is being formed in Los Angeles, whose purpose is to bring about, if possible, the selling of their fruit for cash at home—to organize home auction sales at various points.

Loss of flesh, cough, and pain on the chest may not mean consumption, but are bad signs. Allen's Lung Balsam loosens the cough and heals inflamed air passages. Not a grain of opium in it.

The Armours are said to be putting up a job by which they will get hold of practically all of the potatoes that are grown in the States of Michigan, Indiana and Illinois.

BEFORE BREAKFAST.—Tulare Register: S. Shahan, on the old China place, shot four coyotes yesterday morning and came near getting the fifth.

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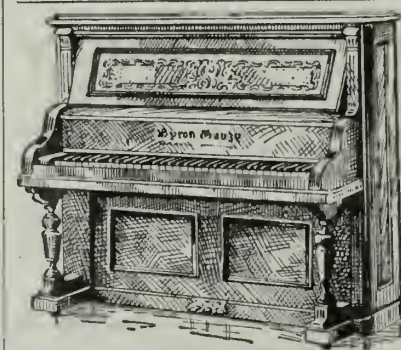
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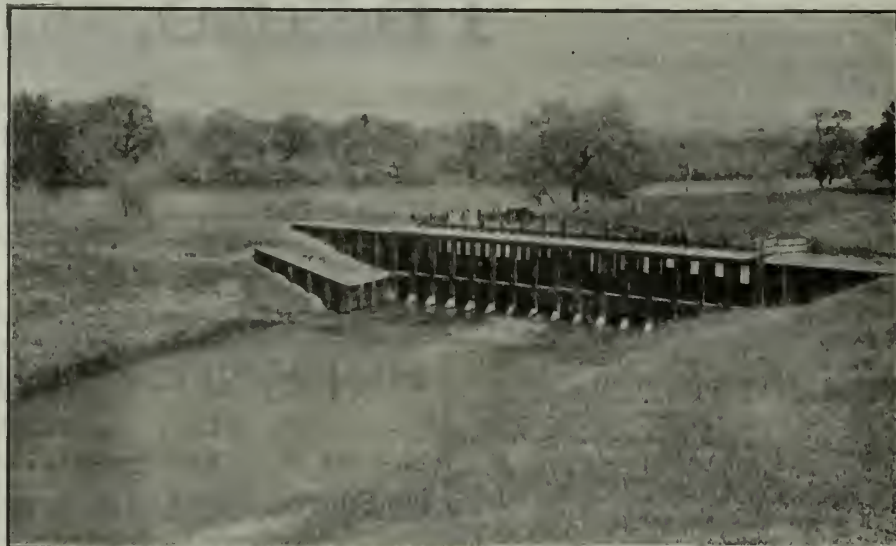
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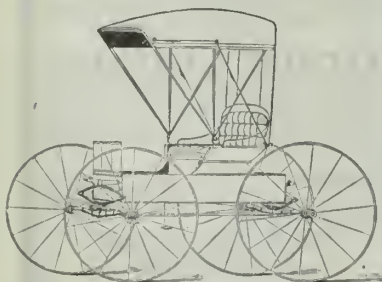
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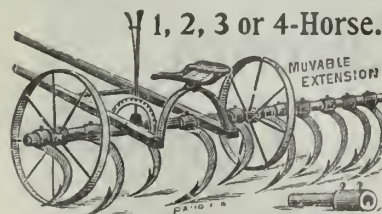
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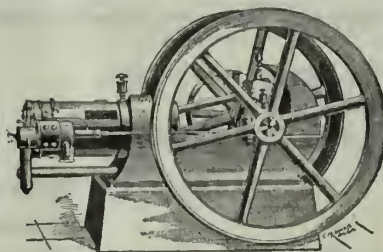
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Vol. LXIV. No. 25.

SAN FRANCISCO, SATURDAY, DECEMBER 20, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Progress of the Alta District.

As a part of the gratifying development which is being realized in the grand San Joaquin valley, the progress of the Alta district is especially worthy of notice. The district includes 30,000 acres of irrigable land, and its geographical center is the thriving town Dinuba. Around Dinuba are the following villages, at distances named: Reedley, to the northwest, 7 miles; Traver, southwest, 12 miles; Monson, southeast, 6 miles; Sultana, east, 3 miles, and Orosi, east, 6 miles—all within the Alta district.

Alta district owns and operates 275 miles of main canals. All of the land has a water right, as the water is in public ownership and goes with the land, and costs from 25 to 30 cents per acre per annum on the average from year to year. The consumer gets all the water he wants at any time during irrigating season.

Alta district lies on the south side of Kings river and is partly in Tulare, Fresno and Kings counties. The main canal takes from Kings river above all other canals, and follows just as near the foothills as the grade will carry the water. Kings



Raisin Vineyard Near Dinuba, Showing Fine Stand of Vines in Their Second Summer in the Vineyard.



One-Year-Old Pear Trees in Nursery of F. H. Wilson, Near Dinuba.

river supplies from 8000 to 20,000 feet per second during the irrigating season.

The greater portion of the soil within the district is a rich sediment soil, well adapted for all varieties of grapes, fruits and alfalfa. The land immediately north, east and south of Dinuba is mostly red soil and celebrated for its productiveness when set to vineyard, and the Dinuba packing house had the largest percentage of 4-crown raisins of any packing house in the California Raisin Growers' Association during the present season.

For alfalfa the land is so well sub-irrigated that no surface irrigation is required. The land to the west of Dinuba is considered the best for alfalfa, but it does well in the heavier lands also.

The Dinuba Board of Trade has made a careful canvass of the products of the district and has prepared a statement showing that grapes after the third year pay from \$50 to \$200 per acre, and the average returns from vineyards is about \$85 per acre. Deciduous fruits bring from \$50 to \$150 per acre annually. Oranges are widely grown, but are best on the upper lands along Kings river.

The Board claims, also, that two acres of alfalfa, properly cared for, will keep three cows the year around, and that good cows will give sufficient milk when delivered at the creamery to sell for \$5 per month; and the calves and hogs are kept on the skim milk, making the returns from cows [per acre] \$7.50 per

month, when everything is done right.

The growth of the district is shown in the fact that at Dinuba there was three years ago one school with two teachers; now there are two schools—a grammar school with five teachers and a high school with two teachers. Two years ago there were 212 registered voters; now there are 390, and plenty more who have not been resident long enough to register.

The district was organized under the Wright law and continues under that plan. The system was originally owned by a San Francisco corporation (known as the '76 Co.) and was in operation a number of years before the Wright law was enacted, at which time the people took advantage of law and purchased. The system being to a certain extent completed, at time of the purchase was made it was possible to proceed under the law successfully. Other districts have proved a failure under this law because they bonded their land and levied taxes to pay for construction while land was in the raw state and before systems were complete enough to give them water to produce crops by which their obligations might be met.



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E. J. WICKSON Horticultural Editor

San Francisco, December 20, 1902.

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The Week.

It is the week before Christmas and holiday affairs are much in evidence in the city. Cool temperature and occasional frosts have made fires acceptable and thus added to the realization of the Christmas season by those who came hither from wintry climates. Our low temperatures are, however, such a poor imitation of the zero affairs which they are even now having east of the Rocky mountains that new comers make fun of them and at the same time enjoy quite fully our holiday sunshine and flowers. We have given a portion of our paper this week a little of the Christmas flavor and extend seasonable congratulations and good wishes to all within our wide circle of readers. Let all get all the joy they can during the joyful season.

Wheat continued on a high perch for a day or two after our last report, while barley was drooping a little, and since then both wheat and barley have taken a lower, slower course, in sympathy with distant centers. Ocean freights are still very low, and disengaged tonnage far greater than last year. More wheat has come down from Oregon. Minor grains are unchanged, supplies being small and holders firm. Beans are quiet and nothing else expected until after the holidays. Bran is stronger, as holders refuse further concessions, and other millstuffs are unchanged. Hay receipts are still held down by lack of cars and prices are stationary. Hogs are in good shape, the scarcity of large holding values, although packers are not now operating freely; small hogs are plentiful enough, but firmly held. Mutton is lower and veal advanced, while beef pursues an even course. Butter is rather weak, and much complaint is made of the considerable resurrected Eastern butter which is being worked off. Cheese is firm and stocks light. Egg receipts are increasing and prices on the recession. Poultry is selling fairly, with special favor for fine young chickens; Eastern turkeys are coming in, and it is difficult to forecast next week, though now turkeys are selling well at good prices. Potatoes are in ample supply and selling evenly, while onions are in smaller amount, and the best are strongly held. Supplies of oranges, lemons, pears and apples are all large and prices low. Dried fruit continues active—a much better trade than usual at this date. Prunes and raisins are moving fast by rail eastward and to Europe, and stories are afloat of a disposition to corner all the prunes now in sight. It does not seem that, after all, California has too many prunes. Honey is firm at the late advance. Hops are quiet, while wool is firm and in light supply.

It is now quite clear that the asparagus rust is far more widely distributed in California than any one knew a few weeks ago. Our discussion of the matter has brought out the fact that it has established itself in the bay region where considerable asparagus is grown on a commercial scale, and it is not sure that the river district is free. Readers have asked how our stamping-out proposition should be applied under the circumstances. Stamping out is probably out of the question now; that prescription was given upon the belief that the disease only existed in isolated spots distant from the commercial plantations, and while the disease only appeared in garden beds, thorough burning of tops and roots seemed a sacrifice which should be undertaken to protect the large, uninfested fields. If, however, it is in the large fields already, the effort must be to restrict it as much as possible, for stamping out is impracticable. The tops should be burned, and added straw thoroughly spread over the field and burned so as to heat the top soil quite high would also be a way to kill spores which may be there. The use of slaked lime as a top dressing would also be promising and worth all its cost, perhaps, for its other effect upon the soil. Close watch must be established for the appearance of the disease to determine whether it appears upon the young shoots which are cut for market. In California asparagus begins to grow for cutting in midwinter, and it is possible that the temperature which then starts the plant may not be high enough to start the fungus. If that is true, and it must be found by careful observation, it is possible that the disease may do the plant less harm than at the east where the shoots start later and the summer heat comes on more suddenly. If we can grow clean shoots during the winter and early spring, and start in spraying the top growth with Bordeaux mixture as soon as it is allowed to grow, it may be possible to keep the disease down and save the asparagus. It is evident that we will have to fight for asparagus and anyone who has not seen any indication of the early yellowing and blackening of the summer growth on his land should not introduce any seeds or roots from other places, but isolate his plantation as much as possible to prevent access of the disease to lands not yet invaded. We shall be glad to help our readers in this matter and ask all to send us at once any young shoots of asparagus which show unnatural appearances.

The poultry people of Petaluma, whose effort for local investigation and experiment in promotion of the success of their interest we have previously noticed, are pushing forward so as to command the attention of the coming Legislature. The Assemblyman from the district will introduce again the bill which was stopped on its way through the last session. This will provide for the location and equipment of a station to be operated by the State University. The people propose to donate money to assist the enterprise, and Mr. Harrison Meacham has offered a tract of land for the location of the outfit. The project is commanding the earnest support of the representatives from Sonoma and Marin counties and is likely to be heard from later. We understand that the poultrymen generally throughout the State endorse the undertaking.

The California growers propose to be clearly heard upon their claims to pasture on the mountains. There is being held this week in Glenn county a meeting of sheep and goat owners of Yuba, Butte, Glenn, Tehama, Colusa, Lake and Mendocino counties to consider ways and means to bring about the postponement of the formation of proposed forest reserves by the Government. Feeling in the sheep and goat centers runs high. Hardly a single resident in the affected territory has refused to sign one of the numerous petitions in circulation protesting against the suggested reservations. The sheep people propose to have their innings and try the matter out with the forest and irrigation people.

Meantime the friends of forestry are moving along other lines. Last week quite a delegation at Washington called upon the Secretary of the Interior and Forester Roth of the Interior Department regarding the protection of the forests of California against fire. Superintendent Allen wants more rangers appointed and a larger appropriation for patrolling the

forests of southern California. Secretary Hitchcock said he was in sympathy with the Californians and gave them to understand that he would favor and work for an appropriation of \$200,000, of which, perhaps, \$80,000 would be apportioned to California.

The Santa Clara growers propose to have credit for their own prunes. Inspired by the growers, Assemblyman Eli Wright has prepared a bill to be introduced at the next session of the Legislature making it a misdemeanor to falsely brand and mark any kind of fruit, representing it to come from other than the section where it is raised. This gives every other section of the country equal protection. The San Jose Farmers' Club has fully discussed the proposition and Mr. Wright is guaranteed the strong support of the growers in securing its passage.

QUERIES AND REPLIES.

Resistant Vines.

TO THE EDITOR:—I have about an acre of Resistant vines one and two years old; mostly Rupestris St. George, a few Riparias. They are planted together. Both have grown equally well. I expect to graft them to Thompson Seedless or possibly to Emperors. Is there any objection to grafting either kind on these roots? Are many of the latter variety being planted now? What is its prospect for a market as a shipping grape? From letters I have read in the PACIFIC RURAL PRESS, I have concluded that the first of April is about the best time to graft. Is that right? Should the graft be left on the vine until grafting or should they be taken off and cared for like cuttings?—READER, Del Rey, Fresno county.

We have no data in mind as to the behavior of the two grapes named on resistant stocks, but we know that other varieties quite similar have taken well on both Rupestris and Riparia. We shall be glad to hear from readers on the point. The Emperor has been a profitable shipping grape ever since the late Dr. Blowers of Woodland began with it more than twenty years ago. Just now it has a special call upon popularity, because of the wonderful returns secured by the Minnewawa vineyard. It must be remembered, however, that as much or perhaps more of the success lies in the handling as in the grape. We should not plant too many Emperors for the suitability of the variety is limited. You are right about grafting. April first is about the time, but there will be variations. The earlier the growth starts the earlier should the grafting be. Scions should be cut before the warm winter weather begins and be kept dormant in a cool place as cuttings are. As to the general proportions about Resistant stocks there is an important statement by Mr. Twight of the University upon another page.

Pyrethrum Powder and Mosquitoes.

TO THE EDITOR:—A new use for pyrethrum powder, made from the flowers of the well-known Dalmatian and Persia insect-powder plants (*Chrysanthemum cinerariæfolium* and *C. coccineum*) has recently been reported from the West Indies and may be of great value to those of your readers who live in mosquito infested regions. The report which is published in Agricultural News for November 8, states that a few spoonfuls of this powder are placed on a tin lid and a lighted match is applied; the powder will slowly smolder, giving off a light smoke which is peculiarly obnoxious to mosquitoes. The odor is not unpleasant and is entirely harmless to human beings, while a room thus fumigated in the evening will probably be found to be free from mosquitoes. Ordinary insect powders frequently contain other substances, some of which may be unpleasant or possibly injurious when burned, it is therefore desirable to secure the pure unadulterated pyrethrum powder. If this remedy proves to be as satisfactory as is claimed for it, it should give a renewed stimulus to pyrethrum culture in California.—JOSEPH BURTT DAVY, Division of Botany, U. S. Department Agriculture, Washington, D. C.

The above is unquestionably true, and though it is not new to California it may be of great value to those who have not heard of it. The information was circulated in California early in the eighties, at the time that the California product of pyrethrum powder, known as buhach, was first placed upon the market. Our recollection is that the knowledge was given to us at that time by the late G. N. Milco, who introduced the plant to California. We began the use of it at that time and have continued it ever since when we have come into mosquito districts, usually carrying a can of buhach in our gripsack for that purpose. We remember being at a viticultural

convention in Fresno in 1885, and being quartered at a hotel where the sleeping rooms had been pre-empted by mosquitoes. We inverted the hotel wash basin and poured out a teaspoonful of buhach lighting it with a match and making a beautiful little volcano. In a room of ordinary size a teaspoonful of powder is enough, and the heat of burning that amount is not dangerous to ordinary hotel crockery. The next morning we carried the only clear brow that was seen at the breakfast table—all others being blotched badly and all others had strong language to use about broken rests and sanguinary conflicts. Since that time we have used this method of reducing mosquitoes frequently, always with the same result. The mosquitoes are scotched for the night—not killed. Now that mosquitoes are so prominent as disease carriers, there should be an extension of interest in the pure pyrethrum product which can be had in California. For home use it might be as well to burn the dried blossoms gathered for that purpose. We wish some reader having them would make trial to see if they are not as effective as the burned powder. Every one in California valleys and foothills can grow the plant and save large quantities of blossoms easily, but the grinding into fine powder requires a good run of millstones such as are used in making buhach at the Stockton factory.

Vine Planting on the Santa Clara Foothills.

TO THE EDITOR:—I am a new comer in this country and have recently purchased a ranch here of thirty acres in the foothills, on the west side of the Santa Clara valley. The elevation is about 500 feet above the sea. I want to plant a field of about twenty acres in vineyard, and I have been directed to apply to you for some information in regard to what kind and when to plant. The field has never had anything but grain planted in it, and has been idle and used as a pasture for several years except last year, when in barley, and yielded one and one-half tons of good hay per acre. The field slopes from the south to the north, and the soil is said to be just the kind suitable for grapes. What will be the best kinds of grapes to plant? When will be the best time to plant? How far apart will it be best to plant? Which is better to plant, cuttings or vines? Is it best to drive a stake at each vine, or will they do without? Is it best to plow the field very deep, or will ordinary plowing do?—NEW COMER, Santa Clara.

In deciding on grape varieties to plant you should first of all decide whether you wish to grow for the wineries or for the table grape market, and your best information in both lines would be the experience of others who are growing grapes in your district. Whatever they have found most profitable would be the varieties for you to plant. Californians are generally quite willing to give neighbors the benefits of their experience. The best time to plant in the coast regions is after the heavy rains and colder weather of the winter is over. This is usually the case by the last of January, and February and early in March would be the best time to plant. On hill lands, where the vine makes less rapid growth than in the valleys, a distance of about 8 feet would probably be right. By using rooted vines you will get a better stand than with cuttings, and you will save about one year's time. Young vines should be staked so that you may have something on which to train the main stem of the vine. It is also a protection to the young trunk during cultivation. After the trunk gains some size, the stake can be dispensed with. The deeper the plowing the better for vine planting, but it is not wise to plow foothill slopes very deeply at this time of the year for fear of landslides and gullies by flow of the rain water. Probably most vines are planted upon land plowed to a depth of 10 or 12 inches.

Special Fertilization.

TO THE EDITOR:—At the Fruit Growers' Convention in San Francisco I raised a query why the buds of the Alexander peach dropped so heavily each spring before blossoming, but could not get any satisfactory answer. It has since been suggested to me that an application of commercial fertilizer, including a quantity of potash, might cause the buds to harden and mature. Your valued opinion in this matter will be highly esteemed; if agreeing with this opinion, a formula suitable for eight-year-old trees on the gray granite soil of Loomis will be appreciated. My Tragedy prunes bore a very heavy crop this last season; would a dressing of fertilizer materially help to their giving a fair crop next season?—READER, Loomis.

Some people have a theory that potash acts favorably upon fruiting of trees when they are making an

exceedingly rapid growth because of the excess of nitrogen present; that is, that the potash acts as a sort of restraint upon the nitrogen. We are not sure that there is anything in the theory. It is very ingenious and taking, but has not so far as we know been actually demonstrated to be true. It would be, however, worth while to try a little experiment for yourself to see if it would act in that manner, and you can easily do it by collecting wood ashes and making an application to a few of the trees, the results of which you could watch. You need hardly be afraid of applying too freely. Several five-gallon oil cans full of fresh wood ashes can be scattered under each tree and the potash will be leached out by the rain. If you find that potash is useful under your soil conditions you can invest another year in potash salts which are sold by the dealers in commercial fertilizers, and can be used to the extent of a couple of hundred pounds to the acre, scattered equally over the ground.

If your Tragedy prunes are bearing well, made a good growth of wood and show good healthy foliage, it is not necessary to fertilize them. If they over-exerted themselves this year probably no application at the present time would influence the setting of the next crop, although it would help the trees to more vigorous growth for succeeding crops.

Grapes for the Colorado Desert.

TO THE EDITOR:—We are desirous of securing a start with the best varieties of table and shipping grapes adapted to this desert valley. What varieties would you recommend and where are they to be had?—READER, Indio.

It is not possible to give a very large list of grapes which are known to be satisfactory under your desert conditions. The behavior of different varieties has to be learned from actual experience with them. We know that at Palm Springs the Sweetwater, Chas-selas Rose, Thompson's Seedless and Malaga are satisfactory as white grapes. The Rose of Peru and Black Hamburg are the most profitable black ones. The Muscat has proved unprofitable. The five varieties named may be as many as you would desire for an experiment. Perhaps you could get cuttings from Mr. M. French Gilman at Palm Springs

Red Spider on Apples.

TO THE EDITOR:—I set a small lot of apple trees in nursery last year, now I find some of them badly affected with red spider. Is there any wash or preparation I could treat trees with before setting in orchard?—READER, Castroville.

It is exceedingly difficult to kill the eggs of the red spider with any of the remedies used for other insects, although they are quite readily kept in check by the use of kerosene emulsion after the small insects hatch out from the egg, say in May next. If you have only a few trees to treat you can use strong soapsuds and a brush and in this way remove the eggs without brushing hard enough to injure the bark. This, coupled with the summer treatment, ought to clean the trees, especially in your coast exposure where the red spider does not work such havoc as it does in the interior.

California Trees Hold Themselves Up.

TO THE EDITOR:—I am starting a new place and have no trees for shade. The soil is a deep loam. In your opinion will there ever be danger of any of eucalyptus trees blowing over and doing damage to buildings.—TENDERFOOT, San Joaquin county.

You do not need to fear that any of the eucalypts will blow over if they have a deep loamy soil to root in. Our experience in California is that they root very deeply and will sustain themselves against any wind which is likely to be encountered in the California valleys.

Edible Mushrooms of California.

TO THE EDITOR:—I would like information of the best method of studying the edible mushrooms of California. How would you suggest my obtaining the most dependable work on the subject?—READER, San Francisco.

As this subject has been mentioned by several correspondents, we have secured a statement from Mr. H. T. Hall of the botany department of the University of California. He advises us that there is no publication treating exclusively of California mushrooms. There are, however, several good works on American mushrooms, such as "Mushrooms, Edible,

Poisonous, Etc.," by Prof. George F. Atkinson of Cornell University; "Our Edible Toadstools and Mushrooms, and How to Distinguish Them," by W. H. Gibson; "One Thousand American Fungi; How to Select; Cook the Edible; How to Distinguish and Avoid the Poisonous," by Charles McIlvane. This last is a very comprehensive and elaborate work of over 700 pages. Information of value will also be found in the Year Books, U. S. Department of Agriculture, Washington, D. C., for 1892, 1893 and 1897. The subject is quite complicated, and it will require considerable study to become proficient in determining the numerous species; but with one or two of the above works the student should be able to get a fair knowledge of the subject, especially if he has had some previous botanical training.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 15, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather during the week was very favorable for growing crops and grass. Light rain fell in all sections. Cooler weather commenced on Friday and heavy frosts occurred in many places, but citrus fruits were not injured. Early grain is making good growth and looking strong and healthy. Plowing and seeding are progressing satisfactorily, and prospects are good for a large acreage of wheat, oats and barley. Green feed is abundant and of excellent quality. Stock is in good condition. Orange picking and shipping continue. Late raspberries and strawberries in the vicinity of Sacramento were injured by the heavy frost Saturday morning.

COAST AND BAY SECTIONS.

Cool, cloudy weather during the week somewhat retarded the growth of grain and grass in the northern districts, but in other sections conditions were more favorable. Heavy rains fell in nearly all sections, and was of great benefit in the southern sections. The soil is now in excellent condition for cultivation, and plowing and seeding are progressing rapidly. Early sown grain is making good growth and looking well. A large acreage of wheat, barley and oats will be seeded if weather continues favorable. Green feed is plentiful, and stock is doing well. Heavy frosts at the close of the week caused no damage. Citrus fruits are in good condition.

SAN JOAQUIN VALLEY.

Fair, warm weather prevailed during the first part of the week and cloudy, cool weather the latter. General rain fell on the 10th and 11th. The rain was very beneficial to early sown grain and grass, and also put the ground in excellent condition for plowing. Plowing and seeding are progressing very rapidly, and early sown grain is looking well. Green feed is making good growth, and stock of all kinds is in good condition. Most of the orange crop has been marketed. The crop was good and of excellent quality. The deciduous fruit crop has all been harvested and the packing houses are now closed for the season. Heavy frosts occurred generally Sunday and Monday mornings, but no damage has been reported.

SOUTHERN CALIFORNIA.

Cool weather at the beginning of the week was followed by higher temperature and rain. The rainfall was quite heavy in some places. Severe frosts occurred in some sections, but no damage to citrus fruits has been reported. Ample warnings were given and smudging was resorted to by many growers. Orange picking and shipping are progressing. The rain was of considerable benefit to grain and grass. Plowing and seeding are in progress. Green feed is abundant and of good quality. Cooler weather prevailed at the close of the week.

EUREKA SUMMARY.—Heavy frosts occurred Sunday, but no material damage reported. Considerable plowing and some seeding the latter part of the week. The growth of grass is somewhat retarded by cold weather.

LOS ANGELES SUMMARY.—The rain improved feed, early sown grain and vegetables. Plowing and seeding accelerated; farmers in good spirits. Cold at close of the week with heavy frosts, but no damage reported so far.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 17, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	1.16	19.38	15.02	14.30	54	36
Red Bluff.....	.26	11.93	9.68	8.16	56	34
Sacramento.....	.78	5.29	6.04	5.78	54	32
San Francisco.....	.49	5.16	5.80	5.13	56	43
Fresno.....	.44	8.10	2.17	5.83	56	32
Independence.....	.04	.83	1.35	1.64	56	32
San Luis Obispo.....	1.45	5.24	4.56	4.95	61	40
Los Angeles.....	2.07	3.46	2.46	5.18	61	40
San Diego.....	2.88	5.38	.77	2.28	62	40
Yuma.....	.76	1.47	.22	1.52	72	36

FRUIT MARKETING.

Fruit Packing, Marketing and Transportation.

By GEORGE D. KELLOGG of Newcastle, at the Fruit Growers' Convention.

The subject assigned me for this paper is a great one. Divided into separate headings, each would be a subject for a paper. Coming at once to the propositions, we take up the first subdivision:

FRUIT PACKING.—This, of necessity, carries with it careful picking, selecting, grading and packing. It does not seem possible that much of anything new can be said or thought on this matter. From New York to the Golden Gate, the country is becoming too rich in fruits to take many chances in the case. Yet we have been deceiving ourselves for many years by permitting careless and indifferent selecting, grading and packing of fruits shipped from California. In the matter of uniformity, neatness and convenience of packages in which to ship our fruit, great progress has been made within the last decade. But we have not been diligent enough in guarding against the promiscuous and indiscriminate picking, selecting, grading and packing of our fruit in the past.

TOP AND BOTTOM.—It has been hinted that there were those who, through mistake or intention, have brought fruit to market when the lower tier in the box was inferior to the top tier; possibly, the boxes may have been nailed wrong side up by the boy that nailed them; nevertheless, in more than twenty years' of experience as a fruit shipper, I have had not less than three such cases come under my personal observation. Within the last season I had occasion to load a car of cannery peaches. A grower who professed to have some extra fine peaches was to avail himself of the opportunity to enter into this shipment and obtain the highest market price. He came in with his load at the wrong time to place in the car; the peaches, as they showed in the lug boxes, showed that they were truly a loss, that the car could not include this load, everything appeared to be the prescribed 2½ inches and over and very perfect. Under the very severe protest of the grower, this load was sent to the cannery with the assurance of just the same price as if it was to be shipped to the distant cannery. Of course, this fruit had to be graded and the lugs emptied; this revealed the fact that 2 miles of foothill roads had shaken all of the peaches 2 inches and less, and all of the split pits, wormy and green peaches to the bottom of every lug. Of course, this caused a shrinkage in weight of the fruit which was suitable for cannery purposes and gave the cannery a very low reputation in the estimation and outspoken opinion of this said grower. That man deceived himself; he did not realize it when filling his lugs; but what of the man who sends his fruit to an Eastern market, where there is a series of tariffs, adding to the cost of his box from 37 to 90 cents, that will pack in that box any fruit which will not bear close inspection? The fruit is opened and is laid upon the market, the poor and imperfect is discovered, the consumer avenges himself upon the consignor by buying all of the good, as well as all of the bad fruit, in that display at a very low price—possibly, at a price that it will not cover the cost of freight and other charges; it means a loss to somebody. Or, take it the other way: It is sold without detection; the consumer opens the box at home and discovers the deception, at once notes down where the fruit came from; he estimates that all the fruit from that section is of the same class, condemns it all together and seeks to get even on the next purchase—a loss somewhere is bound to ensue.

There should be some system evolved that will ensure against such a pack being permitted to leave the station where it has been put up.

GRADING.—Proper packing involves the retraction of proper spraying and thinning of the fruit months before the packing begins, in order to put the fruit in proper condition when it has matured.

There ought to be grades of deciduous fruit established, as there are grades of oranges, by number or name any fruit may be known and the grade to which it belongs. A peach should never be shipped after the Hale's Early crop has been harvested smaller than 96 to the box; this means eight peaches on a side, six rows wide, and two tiers to the box, of course. The sizes 84, 72, 60 and 48 to the box are better; if none other were shipped the reputation of California peaches would be raised; we would get more money for our crop, pay less for hired help and for freight, with a prospect that California peaches, under such conditions, properly graded, selected and packed, would be in demand in any of the principal markets, regardless of supply of local fruits. The same can be said of any fruit we raise, by carrying out the same thought in a legitimate way, changing to conform to the requirements of conditions and class of fruits.

If this Convention could so grade and systematize the packing and grading, and would adopt some method by which it would be understood by some name or number just the grade of fruit you are hauling, it would be a long step in advance.

Like everything else, you have to begin right to

pack a box of peaches properly; but if the upper and lower tiers are packed with broken joints and of uniform size your peaches will present a neat appearance, they will not be nearly so likely to bruise, the box will be well filled and will not shake loose until the cover is raised.

MARKETING.—Marketing of the fruit is the second proposition given me. Discussing it from a grower's or a shipper's standpoint makes but little difference, the proposition is the same—their interests are identical. The prosperity of the shipper always means the prosperity of the grower, and is due to the careful selection of the markets and the proper distribution of the fruit.

To the grower I would say: One of the important things to make a success in marketing is first to select the shipper in whom he can repose confidence, then stay by him and help him to establish a desirable brand and to work out some of the problems he may have at times to solve. Often he has to make concessions in exploiting new markets and in meeting local conditions on the market that you would do well to help him meet, as in the end it might be that he has gained a point which will inure to your own best interests; he builds up a trade by knowing that he can rely upon your pack of fruit; you and he are alike injured if you fail to stand by him at the proper time. Beware of the spasmodic buyer who can well afford to give a few cents more for some certain line of fruit when he chances to have an order for a car, and who can not take care of your interests when his order has been filled or provide for your other lines of fruit. The man who has stood by you in times of plenty deserves to have the principles of reciprocity applied. Then there is a demand for your product.

REGULATION.—These are days when co-operation becomes a necessity, with all the perils of the California fruit business, owing to the world-wide competition that has to be met. So, in my humble opinion, I would insist upon the fruit being marketed through legitimate channels of the widest circle of co-operation possible, and would therefore advise the concentration of the control of all fruit as much as possible. It certainly can be demonstrated that a strong central organization may be made to serve the purpose of every shipper, and permit that shipper to maintain his identity and be as nearly independent as the best interests of the fruit industry will permit. In this I am not advocating a fruit trust, or a combination that will work injury to any one interested, but for the purpose of regulating the market. The season of 1902, perhaps the most peculiar and the one most trying in our experience, would probably have been much more disastrous had not a large percentage of the output of the State been carefully guarded to keep some of the markets from overflow and exploiting and furnishing others not properly supplied. The enormity of the California crop, together with the spontaneity of the fruit crop almost anywhere, taken with the added difficulty that the effort was undertaken late in the season, and for that reason a full control could not be obtained at so late a date, fruit was brought into contact disastrously, which in the future should be carefully avoided.

There is no question but that every organization now shipping fruit from the State has clearly demonstrated its right to exist; but if all of the fruit interests in the State could be harmonized, and through one system of general information a complete knowledge of the wants of every market obtained, with a central power to divert any cars, to avert conflict, or crowding in any market, and to keep neglected markets supplied, what an advantage would be gained thereby? Of course, I am talking now mainly to the shippers. Through such an organization, for the purposes of co-operation and self-protection, the abuse of the power to reject cars on a flimsy pretext would not necessarily have to be submitted to. The power of such a central body could eliminate altogether unjust rejection, through concert of action and the application of a correct business principle of requiring the consignee's acceptance of the car, protect the drafts and file claims, with proofs, of alleged damage, which could be settled justly through the same central body. The man who would object to this proper way of settling the matter would necessarily have to retire from the business of handling California deciduous fruits for a living. It can only be reached through co-operation; it is perfectly feasible when based upon mutual confidence in each other's integrity.

SELLING PLANS.—Whether the f. o. b. or the auction plan is the better is a question of localities. My judgment is that there are legitimate fields for each, and that, as much as possible, one must not interfere with the other. This, however, can only be regulated through co-operation and proper distribution. I am more than half persuaded that there are auction points now that should be converted to f. o. b. points; there possibly may be some few places where auctions should be established where they are not; but I could not suggest any such at this time. The auction seems to be a necessity in some of the great centers and a valuable method of marketing fruit at such points. I therefore commit myself to the approval of auctions in the larger centers, under some regulation whereby they shall not harm legitimate f. o. b. fields, which should cover the greatest portion of our fruit shipments.

TRANSPORTATION.—Having noticed upon the programme that there are others to discuss this subject, I will not go into detail as I otherwise would. Upon one point we will all agree, and that is that the cost of transportation is high and surrounded by many difficulties which often bring disaster. If a reduction in freight rates can be obtained without being done at the expense of the service, I should say, most emphatically, that the fruit interests of California demand it. Of more benefit to the fruit interests of California than reduction of rates is that of good service; when trains will be started out on regular schedule time, and run on schedule through to destination. My experience and observation lead me to affirm that a greater loss of money has come through failure of transportation lines to run cars closely on schedule than through high freight rates. I should hail it as a glad day could we see a reform in both rates and regular time; but, if we can not have but the one, let us call for a reform on that line which loses us most money, viz.: irregular and unreliable time.

HOW LOSSES OCCUR.—The poor service with which we have had to contend in the past has cost the shippers loss in reputation and untold amounts of money through being unable to place cars of fruit into the markets at the proper time. Markets have depended upon certain cars for a given date; being delayed in transit a day or two, the market is disappointed by having no fruit; other cars are billed for that market two days later; both shipments arrive at the same time and the market is oversupplied. The two cars have to be disposed of practically at the price of one, often, and always at the expense of the first car shipped. Two freights have been paid, and but little better than the price of the one car obtained, when, if each car could have been sold on the day it was desired, a profit, instead of a loss, would have been entered.

I would accept of a reliable schedule of nine days to Chicago, in preference to a seven-day time card, with no certainty of its accuracy. I do not wish to be understood as advocating a nine-day delivery to Chicago, by any means. I am only accepting of a certainty in preference to an uncertainty. We should insist upon a reliable schedule of never to exceed seven days to Chicago, and believe it is not unreasonable to insist upon the carriers bringing the time down to a reliable schedule of seven days, at present rates, when we consider the competition with which we have to contend and the vast interests of the fruit industry in California. We want to be just and expect to receive justice.

CAR LINES.—Refrigerator cars and cold storage have proven themselves very important factors in the marketing of our deciduous fruits. A good system has been provided us for which we have paid liberally.

It has been published that the Southern Pacific Co. has entered into contract with the Armour lines for a term of years to supply our wants for cars in which to transport our fruit to the Eastern markets. Until the railroad can supply the equipment to be furnished without additional cost to shippers in freight rates, I feel perhaps that we might find cause for rejoicing and approval that they have established a system that is already complete with icing stations and experienced management, and that we are not compelled to accept of any experiment or new ills that might confront us. We can accept the Armour lines as being well established and equipped, with no excuse for rendering anything but the best of service, which in the fruit business is the imperative need of the hour.

An Expert's Views.

T. A. Dixon, manager of the C. F. C. A. cannery at San Jose, returned recently from an Eastern trip to all the principal cities beyond the Rockies, and in an interview on his return he said:

"There is uncommon prosperity in all lines of business throughout the Eastern States. All canning crops are short, especially corn. In this connection I may say that I believe there is an opportunity to build up a great vegetable canning business on this coast. Our insular and Alaska possessions furnish the market.

"The market for California fruits is not 25% developed. Even in the best Eastern hotels it is hard to get your order filled for prunes, and if the fruit is brought it is apt to be of a poor quality or poorly cooked. The Eastern public eats grapes and other green fruit, but that is simply because education of the value of our products is lacking. The market has not been properly exploited either for our dried or canned fruits. In just the proportion that we make these goods reliable our market will increase.

"Small packages of fruit are in great demand, even though they cost more money. A million people live in apartments in New York alone. Their rooms and closets are small. They want only enough fruit for a day's consumption and they search the market for such packages. One-pound packages of fruit would find a ready market and fancy prices awaiting them. All the development is along the line of high class goods. The concerns that are doing the big business in preserves are those that put up the best

goods. I visited a number of these factories and they are marvels of cleanliness and system. Our apricots have driven the Spanish, French, Italian and Portuguese fruits out of the markets. Not because they are cheaper, but because they are better. There is a greater demand for prunes of the 70 and 80 grades than we can grow in this State, and good prices await this fruit, but the Eastern people do not want our trash. The making of preserves can be made a great industry here.

"One-half of the high class preserves sold in this country are packed in England. The reason of this is the goods are reliable.

"Our fruit suffers also from the practice of adulterating preserves. There are factories that send out stuff that I venture to say does not contain 10% of fruit. The country needs a national pure fruit law, and needs it rigidly enforced."

THE VINEYARD.

Adaptation of Resistant Stocks to California Conditions.

By E. H. TWIGHT, University Instructor in Viticulture at the State Fruit Growers' Convention.

In a retrospective survey of the early history of the reconstitution of French phylloxera devastated vineyards on American resistant roots no feature is more conspicuous than the numerous failures recorded. These failures arose from very varied causes, among others almost complete ignorance as to the class of soil in which the American vines grew naturally, want of practical information with regard to their grafting affinities with European stock, uncertainty in respect to the varieties and even species planted, their doubtful resistance and occasional negative resistance to strong attacks of the phylloxera and final adherence to the old methods of shallow preparatory cultivation in creating new vineyards.

We find to-day the same things to be overcome in California, with this point in our favor, that we have the past experience of other countries to lead us in the solution of those problems.

If we study the conditions of adaptation of resistant stocks in our California soils we find that one of the most important factors which had to be overcome in many vineyard districts of Europe will not cause us any trouble: "Chlorosis," the disease caused by the presence of an excess of lime in the soil, has not to be dealt with, for our California soils as a very general rule do not contain carbonate of lime in any injurious quantities.

What we have to deal with in the choice of our resistant roots is the compactness of the soil, the conditions of moisture, the fertility of the land, in some districts the amount of alkali contained in the soil.

THE COMPACTNESS of the soil, generally due to an excess of clay, is an obstacle to the growth of many varieties of resistant stock; their roots do not penetrate easily, the ground is cold and often wet, and the Rupestris and Riparia, for instance, do poorly under these conditions. On the contrary the Lenoir, Champini, Riparia x Rupestris 3306 and 10,114 will do well; the Solonis x Cordifolia, Rupestris 2024 will do still better, the last three varieties, 3306, 10,114 and 2024, having a higher resistance to phylloxera, should be our choice. If we examine the probable cause for that special adaptation to heavy soils we find that the varieties growing better in heavy soils have larger and more fleshy roots than we find in the Rupestris or Riparias.

THE MOISTURE, when in excess, is also an important factor in adaptation, as it checks the growth of the radicular system. Vines growing in a very moist place may have a vigorous aerial growth but the root system is generally weak; such a vine will suffer greatly if for some reason the supply of moisture should fall below the average. On the other hand a moist soil will help a vine in its fight against the phylloxera, and we may see in such conditions a stock inferior in resistance do fairly well. As a general rule the Solonis hybrids or the Solonis itself are good in such soils. Among the most promising hybrids of Solonis are the Solonis x Riparia 1615 and 1616, and the Solonis x Cordifolia, Rupestris 2024; they are far more resistant than the straight Solonis.

THE FERTILITY of the soil is a condition effecting adaptation that we cannot overlook; a Riparia, a Solonis, will turn yellow and sick in a soil where a Rupestris could do fairly well. This does not mean that a Rupestris will not do better in a good soil than in a poor one, but simply that it is more rustic in its adaptation.

I do not intend going over the value of the resistant stocks that have been commonly used in California (Riparias, Rupestris, Lenoir, Solonis); they are fairly well known though their adaptation does not seem very clear in the minds of many. We see every day Riparias planted on gravelly hillsides where Rupestris should be used, Rupestris or Riparias planted on stiff clays where Lenoir would be superior, or on moist locations where the Solonis would be better adapted. What I want to call your attention to is the numerous valuable stocks well adapted probably to some of our difficult soils, and that have only re-

cently made their appearance in our nursery catalogues though they are thoroughly known now in other countries.

HYBRIDS.—Those resistant stocks are hybrids that have been obtained by crossing varieties to try and widen the range of adaptation or to increase the resistance of some varieties. In creating those hybrids at first the object was to take a vinifera vine (such as Carignane), cross it with a resistant (such as Rupestris) and obtain a direct producer (Carignane x Rupestris) that would be resistant and would not need grafting. The results in that direction have been fairly good regarding the resistance of the stocks obtained but not in the bearing qualities. At the same time by crossing American varieties good results were obtained in bringing in the qualities of some stocks that were before considered as valueless on account of the difficulty to make them grow from cuttings or to graft them. Thus the Vitis Candicans, the Vitis Cordifolia, the Vitis Berlandieri crossed with easily rooted varieties such as Riparia, Rupestris, Solonis, gave some stocks which in compact, in moist, in dry conditions, proved to be very valuable.

The hybrids of Riparia x Rupestris also gave very good stocks. Two classes have been created:

The Vinifera x Americans are hybrids between our actual wine and table grapes and resistant stocks.

The Americo x Americans are hybrids between two or more resistant stocks.

They are not supposed to displace the ordinary stock, but to take their place in locations more difficult to re-establish.

DRY LOCATIONS.

VINIFERA X AMERICANS.	AMERICO X AMERICANS.
Bourrisquou x Rupestris 603.	Rupestris du Lot.
Pinot x Rupestris 1305.	Riparia x Rupestris 3309.
Carignane x Rupestris 501.	Riparia x Cordifolia Rupestris 1068.
Cabernet x Rupestris 33A.	

WET SOILS.

Mourvedre x Rupestris 1202.	Solonis x Riparia 1616.
Aramon x Rupestris 1.	Solonis x Cordifolia, Rupestris 2024.

COMPACT SOILS.

Aramon x Rupestris 1.	Solonis x Cordifolia, Rupestris 2024.
Bourrisquou x Rupestris 601.	Riparia x Rupestris 3306 and 10,114.
Mourvedre x Rupestris 1202.	Riparia x Cordifolia Rupestris 1068.

This table shows some of the soils in which hybrids may be very useful; certain hybrids such as those of Riparia x Rupestris may displace entirely the Riparia and Rupestris on account of their wider range of adaptation and affinity.

In both groups of Americo x American and Vinifera American hybrids we can find some varieties well adapted to our special conditions; in both we find a good resistance to phylloxera in the selected numbers of stock. Which should we plant in our vineyards?

It may be said in a general way that the Americo x American hybrids, as well as the ordinary American stocks, make the vinifera scions that are grafted on them bear more heavily than they would if they were on their own roots. They come into full bearing earlier, and generally the fruit will also ripen a few days earlier. The grapes may be a little lower in sugar than when growing on their own stock, and some authorities claim that their flavor may be affected slightly. The heavy bearing of the vines grafted on these stocks will exhaust the land sooner, so that fertilizing will have to be resorted to earlier, and it is a known fact that heavy fertilization affects the quality of the grapes.

On Vinifera x American roots the scions of vinifera after grafting give about the same results as on their own roots.

From these remarks we may conclude that the American resistant stocks and their direct hybrids will probably be favored by those who look to quantity more than to quality, while for the fancy wine grapes, table grapes or raisin grapes, Vinifera x American may be chosen. The choice between the two groups is mainly an economic question.

All these varieties together with several of Mr. Munson's varieties have been tested in other countries with satisfactory results; we need them for many of our soils. We have adobe soils which remain wet, others that dry up and crack; we have sandy lands, white ash lands, gravelly lands, which should be investigated. We have lost already many valuable years. I should like to impress on this Convention the need of erecting experiment plots to test the adaptation and affinity of a collection of resistant stock to such an extent that we might say to each vineyardist when his time comes to replant: this is the stock adapted to your land, so that he will not run any risk of again losing his vineyard. With more than 200,000 acres planted to vineyards and valued at \$40,000,000 to \$50,000,000; with \$25,000,000 or \$30,000,000 more invested in wineries, packing houses and driers, making a total of \$65,000,000 to \$80,000,000 invested in the viticultural interests of the State of California, representing over one-half of the total viticultural interests of the United States, we ought to be able to keep ahead or at least to protect ourselves.

Phylloxera is spreading gradually from north to

south; it is nearing the Tehachapi; all California viticulturists, whether wine men, grape men or raisin men, ought to see that their interests are protected. Our viticultural department of the State University ought to have an appropriation that would enable it to carry on that work, to establish those stations for the study of resistant stock, to study new methods of vinification, etc. Australia and Cape Colony are doing more with their limited area of vineyards than we are.

I hope that this convention will see the importance of these investigations and use its influence to see that they are carried out.

THE POULTRY YARD.

The Thoroughbred Runt Pigeon.

A paper read before the Oakland Poultry Association by H. F. WHITMAN of Alameda, Cal.

In giving a lecture or treatise on the Runt, you will naturally expect me to first tell of its origin and from what it derived its name; but this I am unable to do, because none of the authors of pigeon books have been able to enlighten us on the subject. Rev. W. F. Lumley of England, one of the best modern writers on pigeons, ignores the origin and cause of name entirely, simply starting off with the characteristics of the Runt. Lewis Wright, another famous writer on pigeons, also evades these two questions that so many of us would like to know about, and W. B. Tegetmeier, probably one of the earliest writers of pigeons, their habits, etc., makes a sort of a bluff at it by saying "it is called in Italian Tronfo and Asterenellato; in English, a Runt; a name (as I suppose) corrupted from the Italian Tronfo; though, to say the truth, what this Italian word Tronfo signifies, and consequently why this kind of pigeon is so called, I am altogether ignorant."

So we are unable to learn from even the oldest writers why a Runt is so called and when, where or how it originated, although I know of their having been in existence since 1664.

In 1895 I imported two pairs of Runts, the first ever seen on this coast; that is, the first genuine Runts; I believe there had been a few so-called Runts sent here before. These two pairs of Runts, we will call them No. 1 and No. 2, went to nest in July. In fifteen breeding months pair No. 1 raised me twenty-four birds. In twelve breeding months pair No. 2 raised twenty-two birds. In twenty-seven breeding months these two pairs and their youngsters produced over 260 Runts, from which I realized over \$1200, some selling as high as \$25 per pair and some of the smaller ones for \$7.50 per pair. I can't see where the poor breeding comes in, in this instance. Here is another and later instance: In 1900 I imported two pairs. Pair No. 1 bred eight birds in as many months. I received \$75 for seven of the young and gave one away. Pair No. 2 bred thirteen birds in eight months and I sold them for \$105, or, in other words, I realized \$180 for just the young from these two pairs of birds in one season. Of course the amount of money for which they sold cuts no figure in the breeding qualities of the Runt, except that it is human nature to be able to grasp figures better when they are connected with an income of so many dollars, and I dare say many of you who are listening to this lecture to-night will long remember the fact that two pairs of Runts produced over 260 birds in twenty-seven months, because you have also heard that they were sold for \$1200. After hearing the above facts and figures, I think you will agree with me that there is no truth whatever in the assertion made occasionally that Runts are poor breeders.

At this time it is very seldom we hear the question asked, "What is the Runt good for?" and yet I suppose there are some of you here to-night who have never tasted a squab hatched from a Runt or Runt cross, and those who haven't don't know what a delicious treat they have missed. As you all know, the Frenchman is a better judge of good things to eat than any other inhabitant of the world, and he is very fond of squabs produced by crossing the Runt with hen pigeons or Homers. They are bred and fattened for the French market as follows: When three weeks old the birds are crammed, after a week of which they put on a surprising amount of flesh. The crammers usually fill the birds from the mouth with millet kept in water, taking a mouthful and "blowing" the crops full three times a day. Lately they have introduced the plan of cramming them as they do poultry, with buckwheat meal paste or gruel, administered through a flexible tube.

The Runt cross squab is not only nearly twice as large as those of the common pigeon, but the flesh is much sweeter, very tender and juicy.

As may be conjectured from their gigantic size and long flights, Runts are not good flyers. It is well, therefore, to place their nests at not more than 6 feet from the ground, but they will breed better if not too closely confined; that is, they should have an aviary to fly into that is at least 7 or 8 feet high, and perches should be placed high enough to give them some little exercise in flying up to them.

It has been said by some breeders, even those who

have good success with other breeds of pigeons, that the Runt is a poor breeder; but I cannot imagine why it should be so maligned, and can only attribute it to a total misunderstanding of the requirements and habits of the birds, but as words alone are not convincing in such a case, I will proceed to give you a few figures and my own experience.

It does not require a very close observer to see that the Runt has superseded every other variety of pigeon on this coast, nor is it so surprising when we realize how useful they are as well as ornamental. To some fanciers the Jacobin, Pouter, Fantail or Turbit may be more pleasing to the eye on account of their beautiful markings or other characteristics, but it requires a great deal of time and attention to keep up their good points, or otherwise they will soon degenerate into a common pigeon; in fact, it is wonderful how quickly they will fall back unless carefully mated and watched, but it is not so with the runt; throw him into a pen with a small common pigeon and the result is a beautiful cross, sometimes almost as large as Runts, and always well marked or colored.

Put outside of the fancy points the utility of the Runt is the principal reason why it has become such a general favorite with the fanciers here.

Five years ago I was told many times by farsighted customers who thought my prices too high, that in a short time Runts could be bought by the dozen for what I was asking per pair. There are a hundred breeders of these birds to-day where there was one then. Show me one of them who will sell a dozen runts for \$25 and I will show you a man with a poor business head.

There may be some of you here who would like to know something of the habits and how to care for the Runt. Some have claimed them to be exceedingly vicious and ill-tempered, but I have never found them so. Of course, on account of their great size and strength, when they do hit a blow with their wings it is apt to be a pretty hard one, and if the opponent is a small bird, he takes good care after being struck once to keep out of the giant's way. It is also a mistake to think that, on account of their size, they eat so much more than smaller birds; the difference is hardly noticeable. Like all of the feathered tribe, you get better results from the Runt if you don't overcrowd him, for on account of his great size he is apt to kill any squabs that do not belong to him that happen to get into his way by stepping on them or hitting them a rap with his wing; therefore, each pair of breeders should be allowed at least 3 feet of nest room in their houses, and the houses themselves should be free from cracks, well ventilated and water-tight and should have a board floor. As for feed, Niles peas and Egyptian corn is the best food you can give them, although a little variety, such as sound wheat, small yellow corn and millet will be appreciated by them and is good for them if given only about once a week. They should always have before them a box containing one-third grit, one-third ground rock and one-third ground charcoal, mixed well together.

The colors of Runts are just about the same as those of the Homer. Blues, silvers and blue checkers predominate. Birds without any white on the rump, or as they are called, solid blacks, are very rare, and therefore are prized more highly by the fanciers. I believe sooner or later every poultry dealer of any prominence will have a pen of Runts and Runt crosses in his yard, not only for his own pleasure and use, but for the profit he can obtain from them and with which he can help defray the expense of his poultry yard, especially if we are to be at the mercy of the meat trust, and you must bear in mind that a healthy Runt cross squab at four weeks old will have as much meat on it as many chickens do at the age of ten weeks. You must also remember that you don't have to play old hen to the squabs, but their parents attend to their bringing up, and they succeed better if let alone.

Winter Eggs.

TO THE EDITOR:—The most successful winter poultry house I ever saw was a big open straw cattle shed. The shed had been covered direct from the stacker of a thrashing machine. The roof, north side and ends were several feet of straw and chaff. Some thirty head of cattle were in the shed and yard nights and running in the corn stalks day time, besides there was a hog trough in the yard where the shoats got their daily slops of bran, shorts and waste vegetables.

I was a boy at home with Dad and Ma at the time. My father believed in being liberal with salt, the cattle had their salt box and all the slops for the swine was seasoned with salt. I remember that an argument was up as to whether the fowls would get too much salt at the hog trough.

Up over head in this shed were a variety of poles and brush that served to hold the straw up. Flock after flock of the early hatches took up their roosting place in the cattle shed and by winter the regular hen house was almost entirely deserted. Some 150 hens, mostly early pullets, were roosting in the cattle shed by December 1, and the daily output of eggs was from five to eight dozen and it continued all winter.

When the weather got colder and stormy days came the cattle were fed, in racks, clover and timothy hay and millet hay, corn fodder, etc. The cattle were continually working down some of the straw shed and finally the shoats went to sleep in the litter.

That old straw shed seemed to be a home for most everything that could get into it. Even the flocks of quail made daily visits and worked with the hens in and around the yard and shed.

I do not remember of a single ailing fowl all winter and when spring came they were bright and ready to hunt in the nearby grove and orchard.

At the time I looked at all these things as a "matter of course," but since I have grown older and read and listened to up-to-date methods, scientific ventilation, jimcrack feeds and sanitary poultry houses, my mind wanders back to the old straw shed, its simplicity and its success. I have firmly made up my mind that lots of up-to-date poultry theories are more theoretical than practical and that if it was possible for all poultry raisers to have an old straw shed that chicken doctors and remedies would not be so popular as they are.

I am a firm believer in lots of litter for the fowls to work in, also a variety of feeds and unlimited pure air. Still more, I believe fowls should have plenty of salt and water. Stop and think of it, an egg is nearly 80% water, the hens must have water in abundance and unlimited exercise and pure air. Yes, salt will kill fowls, and it will kill stock too, but it will kill nothing if it has been managed carefully.

Sunshine and pure air was made for fowls as well as other life and while it is so cheap why be stingy with it? Straw, chaff, leaves or other kinds of litter is enjoyed by hens just as much as a pond of water is by ducks. The water may not do the ducks any particular good, but plenty of dry litter does the hens good, the scratching in the litter keeps the hens warm and healthy, besides the litter absorbs moisture and keeps the ground or floor under it warm. In building poultry houses we should study the hens more and ourselves less.

M. M. JOHNSON.

ARBORICULTURE.

The Oriental Sycamore as a Street Tree.

TO THE EDITOR:—As there is so much interest in tree planting let me say a word in favor of the Oriental sycamore. About four years ago I asked Prof. Hilgard for suggestions in the matter of street trees; he named the foregoing among others; so I

got half a dozen, which were carefully set out in front of my premises here on the 5th of March, 1898. The trees were about the size of a hoe handle at the butt; measured to-day the largest is 8 inches in diameter, the others somewhat less but not far behind. They have surpassed my anticipation and are the handsomest trees in the city. I have been frequently asked by passers-by, who stopped to admire them, whether they were maples. All speak highly of their beauty. The cloth-like texture of the leaves is favorable to the ready absorption of the moisture from the atmosphere, and as we have a great deal of damp or foggy weather and but few really hot days, they are the tree above all that I have met with for this place, and would no doubt do even better in the coast regions farther north.

R. E. C. STEARNS.

1025 E. 18th St., Los Angeles.

THE FIELD.

The Emperor Grape.

TO THE EDITOR:—Owing to the high prices received for Emperor grapes in the East this season, one car sold by the Earl Fruit Co. bringing \$2700, the variety is being extensively planted. We have been called upon to furnish large quantities of cuttings, and have been somewhat perplexed by inquiries for "Red Emperor," "White Emperor" and "Emperor."

The enclosed letter is self-explanatory. It shows that there is but one variety of Emperor, and that the terms Red Emperor and White Emperor are simply trade names covering variations in color of bunches grown under different conditions.

Martinez.

FRANK T. SWETT.

The following is the letter from the Earl Fruit Co to which Mr. Swett alludes:

"Some time since you made an inquiry relative to grapes shipped as white Emperors. Upon investigation we find that the white Emperors are a product or an offshoot of the ordinary red Emperors. We are informed that climatic conditions, location, as also sometimes too much moisture, produces the change. In most cases, however, the white Emperor is said to be the product of vines which produce too heavy growth of foliage, and sometimes what are known as white Emperors are gathered from the inside of the vines, whereas the outside of the same vines produce the ordinary red Emperor. We conclude, therefore, that white Emperor is really not a separate variety, but is a part or parcel of the red Emperor subject to certain climatic changes and also in the condition of the soil, etc. Our agents inform us that they are particularly careful in shipping white Emperors to cull them very closely, and ship none but very fine large grapes. They add: 'We ship only the very best ones.' While we realize this information may not be very satisfactory, we are giving it to you just as we have been able to obtain it."

Asparagus as a Levee Builder.

TO THE EDITOR:—I frequently see enquiries in the agricultural press for some plant suitable for planting for levee protection, and generally Bermuda grass is recommended because of the thick sod which it forms in suitable soils. I used to be much interested in swamp land reclamation and levee construction and maintenance, but am not directly so now. However, an idea has occurred to me from my observation of the growing of asparagus, and its enormous production of root system, that it would be a very superior plant to set for levee protection. Those, I think, who are familiar with the plant will at once recognize its value for that purpose. It will live and grow in almost any soil, and, if planted closely, even

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in a poor soil will in two or three years form a thick mass of roots, covering every inch of soil. Bermuda grass is almost worthless in a poor, clayey or adobe soil, and where the soil is suitable is liable to spread, to the injury of the land for farming purposes. The asparagus will stand drouth and, I believe, considerable submergence.

Redding. L. F. BASSETT.

Agricultural Review.

BUTTE.

EXTENSION OF HEMP CROP.—Gridley Herald: John Heaney, who is the only raiser of hemp in commercial quantities in the state, will seed sixty acres more than usual this year.

FRESNO.

ON THE LAGUNA DE TACHE.—Nearly one hundred Dunkards from Nebraska settled last week. They came in a special train.

A CROSS-COUNTRY CLUB has been organized.

EASTERN DRAFT COLTS.—Frank Hoogner has introduced ten from Illinois to Kingsbury.

AN IRRIGATION DITCH EVIL.—Selma Enterprise: Farmers are renewing their plea for legislation compelling the removal of weeds from ditch banks, so as to restrain the distribution of seeds of obnoxious plants.

THE TEXAS TICK.—Republican: The report of F. E. Twining, special inspector for the county, says that the trouble "is at present confined to a few dairy ranches near Riverdale, from where it can be easily cleared."

HUMBOLDT.

PROGRESSIVE DAIRYMEN.—Mad River correspondence Eureka Standard: "Our progressive dairymen have two important matters under consideration. First, the erection of silos. On this question there is much diversity of opinion, but the few who have tested the matter in a careful and intelligent way consider the silo indispensable. The second, and no less important change which is causing no little expression of views, with a strong tendency of adoption, is that of employing home separators by the use of which the cream alone will be sent to the creameries."

KINGS.

PIE-FRUIT FED HOGS.—Hanford Sentinel: G. H. Deacon has a bunch of hogs which he is feeding nothing but pie melons and pumpkins, and grape pumice that he gets from the winery, and says he never had hogs fatten better on grain.

GRAIN AND GEESE.—A great deal of grain is being sown in the Duncan and Tandy reclamation districts, Tulare lake section, and there is a great deal more to follow. The lake is now 10 miles long by 4 broad, and a fine place to hunt geese and ducks. Every other day a wagon load are shipped out.

LOS ANGELES.

FARMERS' CLUB CONVENTION occurred Dec. 17, 18 and 19, and was a big affair in every way.

DEATH TO WOOLY APHIS.—Rural Californian: Mr. Payne of Monrovia has used distillate very successfully in the extermination of wooly aphids. The roots of the trees where the insect is generally found, sprinkled with a solution of fourteen parts water and one part distillate will do the business.

MENDOCINO.

EDEN VALLEY RANCH SOLD.—This ranch of 10,000 acres, sold some years ago to a Russian enthusiast for \$100,000 for colonizing purposes, has again found a new owner, who will stock the ranch with thoroughbred cattle and spend a large sum of money in alfalfa fields and other improvements.

MERCED.

HEREFORD BULLS SOLD.—Recently the Crocker-Huffman Co shipped two

carloads—fifty-eight yearling and 2-year-old thoroughbred Hereford bulls, to their ranch at Promontory, Utah, for distribution to Utah parties to whom they were sold.

GOT PRIZES.—The Chowchilla ranch stock at the Chicago Live Stock Show was awarded first and second prizes on Herefords and second prize on Short-horns.

NAPA.

VINEYARD SOLD.—St. Helena Star: E. D. and D. M. Sachs of San Francisco have sold their 320-acre vineyard on Spring mountain, near St. Helena, for \$50,000, to William Marsh, an Eastern man. The purchase includes the winery, of 200,000 gallons capacity, and utensils, but not the wine.

CONTRA COSTA.

A GRAPE YIELD.—Contra Costa Gazette: From 1½ acre of Cornichons located a few miles from Martinez there were sold this year \$783 clear of all expense.

ORANGE.

REDUCED WATER RATES.—Orange News: The price of water under the S. A. V. I. Co.'s system was, on December 1, placed at 10 cents per head for day water and 5 cents per head for night water. Reduction to the same level has been made in Riverside vicinity.

PLACER.

WILL LEARN IN CALIFORNIA.—Auburn Republican: R. A. Simpson of H. M. Simpson & Sons of Vincennes, Indiana, cultivators of apple trees and nursery stock, was here this week inspecting our fruit industries, and will visit most of the important fruit districts of the State. Afterward he will take a short course in agriculture at Berkeley.

RIVERSIDE.

WATER FOR PERRIS VALLEY.—The articles of incorporation of the Temescal Water Co. have been amended to permit it to purchase water-bearing lands, developed water and pumping plant in Perris valley.

NEW FUEL FOR FROST PROTECTION is being introduced by George Griffith, says the Riverside Press and Horticulturist. It is bricquettes, apparently composed of crude oil, asphaltum and sawdust.

SACRAMENTO.

CASH BOY FOR CALIFORNIA.—Record-Union: Judge Peter J. Shields has just received from Governor-elect John Sparks of Reno, Nev., Brown Bessie's Cash Boy, sired by Recorder, one of the greatest Jersey bulls in America, out of Brown Bessie, the champion cow of the celebrated World's Fair butter test.

MORE IN THE SOIL.—The great Natoma vineyard, the second largest in the world, has been sold to several dredging companies and the ground will be mined for gold.

SAN BENITO.

INCREASE IN VALUE.—Hollister Advance: Several of the large land holdings of this county are being turned into game preserves, and the assessor may add to the assessment.

HAY STALLED.—It will require the removal of 102 tons of hay per day every day for the next five months to get the present stock piled here out of the way before the new crop begins to come in.

SAN BERNARDINO.

FATTENING CATTLE.—The Chino Land & Water Co. are now fattening 2700 lank Arizona and Mexican cattle. The ration fed approximates ninety pounds of beet pulp and twelve pounds of hay per day per animal. Every few days a bunch of fat cattle are shipped.

FRUIT ROUTING SUIT.—Judge Wellborn has heard argument on the case of the Interstate Commerce Commission against the Southern Pacific and Santa Fe Railroads on the question and taken the matter under advisement.

A REHEARING OF THE WALKINSHAW CASE concerning appropriation of artesian water has been extensively prayed for and the Los Angeles Times says granted by the California Supreme Court. It is of immense and far-reaching importance.

SAN DIEGO.

POULTRY MEN GET TOGETHER.—Union: The San Diego Poultry & Pet Stock Association has been organized, with George A. Davidson president and Harry McIntire secretary, and will arrange for a show Jan. 21-24. The Association began with twenty-five members and a \$1 fee.

REBUDDING OLIVES.—Escondido Advocate: L. L. Hill of Valley Center, one of the most prosperous growers in that section, has rebudded his olive grove to the Mission olive.

GOOD FOR POULTRY.—N. A. Easton of Merle has forty acres of Australian salt

bush grass and declares it is excellent for live stock and poultry.

SAN JOAQUIN.

PAID OUT WITH GRAPES.—Lodi Sentinel: Four years ago A. Chapadelane bought an eighty-acre farm near here for \$5500. This year from the twenty-six acres of vineyard on it he got 335 tons of grapes, mostly of white wine varieties. For his Tokays he got \$22 per ton; but his wine grapes went on a contract at only \$12 a ton; yet he received \$5100 for the crop—almost enough, not counting expense of crop, to pay for his place in one year, at low prices, and the balance of the farm returned him a good profit, too.

PALM TREES FOR ARBOR DAY.—Frank West gave 600 young palm trees to the Arbor Club of Stockton for Arbor Day setting. It is reported that the Daughters of the Revolution, at a recent meeting, decided to contribute a tree for each member of the society. Others are taking a deep interest in the movement and have promised to subscribe liberally.

A REMEDY AGAINST ISOLATION.—Farmers south of Lodi are putting up a party telephone system 9 miles long. There will be no cost for switches at Lodi.

SANTA BARBARA.

THE STRAWBERRY GUAVA.—Santa Barbara News: The strawberry guava, a fruit that has not been long enough on the market to become much known, is in its perfection just now. For delicacy of flavor it ranks very near the strawberry and in some senses surpasses it.

SANTA CLARA.

FARMERS' CLUB.—Mercury: C. D. Harvey, State Organizer of Patrons of Husbandry, is actively pushing the work of organization in Santa Clara county before going to other fields. He reports the hearty spirit of co-operation manifested by the farmers of Santa Clara county as most encouraging.

CLOSE TO SANTA ROSA'S RECORD.—Advocate: City taxes for the current year have been collected up to within 85 cents.

STOCK FARM SALE.—Times: There are still some 200 horses of all orders and ages remaining on the Palo Alto stock farm for sale. At the recent sale twenty-five head of brood mares and two-year-olds were sold at an average price of \$200 per head. The next disposal of fifty-three head of two-year-olds will take place some time the latter part of January.

SANTA CRUZ.

THE PAJARO VALLEY.—Pajaronian: It is estimated that local driers have handled from 400 to 500 carloads of apples this season. Thirteen carloads of apples were shipped from Watsonville during the past week, bringing the total number of shipments for the season up to 707 carloads.

CONFLICTING INTERESTS.—At a largely attended meeting of union workmen at Watsonville, after the State fruit growers' meeting, Messrs. A. N. Judd and C. H. Rodgers were denounced for favoring the introduction of Chinese for orchard work, and Slavonians for the former are reported to have quit.

SHASTA.

GIANT ALMONDS.—The Redding Free Press claims that Carl Friedrich Schode, living near the Black Diamond mine, has a sport almond tree which is gigantic in size and bears nuts measuring 2½ inches in length and an inch through.

SOLANO.

MORE SHELTER WANTED.—Reporter: It would take about twenty-five houses, renting at \$8 and \$12 per month, to supply Vacaville's present needs.

GOOD PRICE AND PROSPECT.—Republican: The property belonging to the Suisun Valley Fruit Union, which they asked \$850 for, was sold at auction to the Alden Anderson Fruit Company for \$1525, and may be used for a new creamery to be started by Wm. Pierce.

SONOMA.

NO DELINQUENTS THIS TIME.—Republican: For the first time in the history of Santa Rosa every piece of property on the assessment rolls has been made to pay its portion of the tax money with which to conduct the affairs of this city.

Catarrh Cannot be Cured

With LOCAL APPLICATIONS, as they cannot reach the seat of the disease. Catarrh is a blood or constitutional disease, and in order to cure it you must take internal remedies. Hall's Catarrh Cure is taken internally, and acts directly on the blood and mucous surfaces. Hall's Catarrh Cure is not a quick medicine. It was prescribed by one of the best physicians in this country for years, and is a regular prescription. It is composed of the best tonics known, combined with the best blood purifiers, acting directly on the mucous surfaces. The perfect combination of the two ingredients is what produces such wonderful results in curing Catarrh. Send for testimonials, free.

F. J. CHENEY & CO., Props., Toledo, O. Sold by druggists, price 75c. Hall's Family Pills are the best.

SUTTER.

CHANGE BASE OF TAXATION.—Farmer: A petition is to be circulated and then presented to the Legislature, asking that the Levee District charter be amended so as to exempt personal property from taxation. If the petitions are successful the necessary taxes will be raised by assessing only the real property and improvements.

TO NAVIGATE THE FEATHER.—The steam launch Jersey is bidding for freight from Feather river points.

TEHAMA.

COYOTES PLENTIFUL.—Red Bluff News: About thirty were killed on the Bell & Moore sheep range the past few days.

NEW STOCK FARM.—Gerber & Conard of Paynes creek have opened a new stock farm on Elder creek near Tehama, to be called "Riverview."

TULARE.

BUTTERFLY VS. BEE.—A. D. Fleming says the little yellow butterflies suck the alfalfa bloom nearly dry of nectar, and so starve the bees.

BROKE THE RECORD.—Alta Advocate: Haden & Boone broke the record last Monday for land sales, selling seven 20-acre tracts in the Alta irrigation district during the day.

A COUNTRY BOOMLET.—Times: The Visalia condensed milk factory is paying about \$1.40 for milk, being, it is claimed, about 1000 cases behind its orders for condensed milk. This is the highest price ever paid for milk in Visalia.

YOLO.

OILED ROADS.—Woodland Democrat: Two months ago, when the city trustees began the application of oil to College and First streets, there were many doubting Thomases who predicted that the experiment would prove an utter failure, but everybody is now convinced that oiled streets are just what we need.

GOING IN FOR MUIR'S.—Winters Express: P. H. Johnson thinks the Muir about the safest peach to grow and will put out ninety acres this year, making him a total of some 300 acres in fruit.

YUBA.

FARMERS' TELEPHONE LINES.—Marysville Appeal: The cost of such a system now being organized by their agent in connection with the town system of the Sunset Co. is \$20 down and about \$12 a year for switches; long-distance talking extra. The contract with farmers goes much into detail.

Welcome as Sunshine after storm is the relief when an obstinate, pitiless cough has been driven away by Allen's Lung Balsam. No opium in it. The good effect lasts. Take a bottle home with you this day.

BUY alfalfa land graded ready to plant; water right deeded with land guaranteed sufficient for irrigation purposes; near town creameries and R. R.; will sell for a limited time at \$15 per acre; half cash, balance on time if desired. P. H. JORDAN CO., 116 Montgomery St., San Francisco.

I Can Sell Your Farm

no matter where it is. Send description, state price and learn how. Est. '96. Highest references. Offices in 14 cities. W. M. Catrander, 2002 N. A. Bldg., Philadelphia.

English Firm of Fruit Importers and Brokers

wish to represent some California fruit growers. Highest references. Write to "Fruit," care of Bates, Hendy & Co., Advertising Agents, 81 Cannon Street, London, England.

School of Practical, Civil, Mechanical, Electrical and Mining Engineering,

Surveying, Architecture, Drawing and Assaying. 113 FULTON ST., one block west of City Hall, SAN FRANCISCO, CAL.

Open All Year. : A. VAN DER MAILEN, Pres't. Assaying of Ores, \$25; Bullion and Chlorination Assay, \$25; Blowpipe Assay, \$10. Full course of assaying, \$50. Established 1864. Send for Circular

75%

That represents the labor saved in feeding a machine with traveling feed table over the old style plain tables. THIS MACHINE AND ALL

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FEED AND ENSILAGE CUTTERS are the strongest, most durable, largest capacity-machine made. A full stock is carried. We have the most successful

Direct Blast Blower Elevator.

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Horse Owners! Use

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A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charge extra, with full directions for its use. Send for descriptive circulars. THE LAWRENCE-WILLIAMS CO., Cleveland, O.

THE HOME CIRCLE.

Christmas in a Far Off Land.

[From the letter of a soldier of the United States in the army in the Philippines.]

The night was dark and threat'ning,
No stars were in the sky,
We caught him hiding in the lines—
A Filipino spy.
A slender youth with coal black eyes
Dimmed with frightened tears;
We turned him over to the guards,
I fear with callous jeers.

Next morning, it was Christmas Day,
The sun was scorching hot,
A drum's-head court was called,
The spy sentenced to be shot.
Erect before the officers
He disdained to speak,
Although a single crystal
Dropped down his olive cheek.

Upon a long and hurried march,
In light array, you see
We could not take the boy along,
So tied him to a tree.
Told off the firing squad—
Ordered it into line;
One gun alone was empty—
I hope that gun was mine.

Birds in the branches over head
Sang softly in the heat,
The grove a trench of yellow clay,
Shining at his feet.
He faced us with a dauntless air
Although his lips were white.
Our grim old sergeant turned away,
He could not stand the sight.
A flash, a roar, a cloud of smoke,
And headlong to the ground
He fell, face downward in the grass,
And died without a sound.

We turned him over on his face
And death the truth confessed,
For through his open jacket peeped
A woman's tender breast.
We heaped the ground with gentle hands
Above the gallant heart
That in a girlish bosom
Dared act the hero's part.

Our guns and knapsacks ne'er before
Seemed such a heavy load.
With silent thoughts we plodded on
Along the muddy road;
But many a soldier tried, unseen,
To dash a tear away
For her, a Filipino spy,
We shot on Christmas Day.

A Daughter of the Headland.

Black Head and Gull Head scowl defiantly into the northeast on storm-swept days, or in calm weather beam indulgently upon the sea. There's an old feud between the Head brothers and the Atlantic. No sooner had Mother Earth vomited them up, than the sea, resenting the intrusion, began to hammer them, and has been hammering them ever since, and seeking in its own inscrutable ways to destroy them. Fortunately, they were born full grown. Shot from a giant catapult in the earth's belly, they landed and stood; and when their surprise at their sudden new surroundings began to subside, they took cognizance of the fact that the sea was battling them. And being very new, they frowned superciliously. "What could soft stuff like that do against their adamant sides?" they asked themselves.

But the sea had learned the art of patience. At times, in frolicsome wrath, it lifted its arms high up the side of the bluff and clutched with a million fingers at the smooth surface, or leaped to smite its face. Then fawning under the midday sun, it would lick its very feet. That was centuries ago, and frost and rain had scarred and pitted the faces of the bluffs. Icebergs, lured hither by the sea, had distantly discerned the formidableness of the brothers Head and sheered southward, for frozen water was no match for granite.

Hammer, hammer, hammer, boom, boom, boom, in storm or calm, the sea never gave up. Once in a century a boulder would reward its toil, and the bluffs, facing the inevitable with intrepid resignation, still frowned.

On the top of Black Head, 300 feet in air, a lad could fling a pebble into sixty fathoms of green water—sixty fathoms

of water swelling and falling impotently up and down.

A century ago, Black Head had paid tribute to the sea, as its deep-pitted groin bore witness—a century ago this Christmas Eve, by tradition recorded—and the sea claimed toll again to-night. But the face of the bluff was now so smooth again that a drowning cat could scarce get claw-hold there. The sea, with whom 100 years is but a day, had not forgotten, and it lifted its million hands and scraped the side of the bluff for its wages.

Ellen Spray loved Black Head and called it her rock and the stern fishermen of Monhegan had come to allow her claim. At five she used to wander up there and nestle in the grass, unfearful of the old cliff's height, and throw pebbles into the sea. As a girl she would conjure the mighty rock, a genie, and weave romances about it. And the great cliff would take on form to her. She always took sides with it in its feud with the sea. Then she became afraid the sea might know she was against it, so she whispered her terms of endearment to the bluff in a very low, soft voice. But the bluff was so busy watching its constant foe, the sea, that it never paid any attention to her caresses.

Years passed, and Ellen Spray had a lover. She had many suitors among the fisherlads of Monhegan, but only one true and accepted lover. Caleb Decker was the fortunate youth. It was a very simple love affair, that of Ellen Spray and Caleb Decker. There was no black-browed villain in it. The other lads had come to concede Caleb's right and to console themselves with less beautiful maidens. And Ellen and Caleb used to wander far out on Black Head and gaze upon the sea and into a future quite as inscrutable.

The morning before Christmas the young couple forced their way up the bluff against the gale.

"It's getting worse," said Caleb. "Hang close to me. Don't be afraid." "I never was afraid here; Black Head has always been my friend," laughed the girl.

Jack Phillips, coming down, met them.

"Stevens says we're to lobster to-night at twelve, Caleb," he said, and passed on.

"Will you go out?" Caleb shouted after him.

"Not if it holds like this."

Ellen drew closer to her lover. "I don't feel good, Caleb," she said.

"Why, what's the matter, honey?"

"Hank Stevens never liked you—"

she paused.

"But I'm not afraid of him. He can't hurt me."

"He knows we're to be married to-morrow night."

"Sure."

"Well, why did he hold orders back till to-day, with the gale a-blowing?"

"I dunno. Waiting till prices got high enough to suit him, I s'pose."

"I don't believe it. What he knows is that you'll go out in any weather sooner than be beaten, and that you won't take a dare."

"We must; prices are way up. I can make a hundred dollars in a week. We've all been waiting for the word."

"He'd like to see us separated, said the girl, hugging Caleb's arm as if to prevent such a contingency by sheer force.

"A little money can't separate us, I reckon."

"It ain't that. O Caleb, I wish you wouldn't go out. It's going to be a bad night, and who knows—"

They had reached the point of the bluff and stood looking seaward.

"I wouldn't want to come to this rock in distress," said Caleb, shuddering.

"What show would a man have there?"

In vain did the maiden plead with the young fisherman. It was not to be thought of. Stay ashore? Never, when the others should go out. Would she have him esteemed a coward, and on the eve of his wedding?

Ellen kept back her tears and ceased her pleading.

At twelve o'clock, midnight, the notice read, the lobster pots were to be put out. In deep water, too, they were to go, for in winter the grotesque

creatures keep off shore. As they stood there they could see the rocky headlands of Maine frowning back across an eleven-mile stretch, at the brothers Head.

"I wish we had the same laws as Bristol, over there," said Ellen. "We're part of the same township. Then you could fish when you pleased."

"It's better as it is," said Caleb. "We make no more laws than we can obey. One law—that of common consent—the law of lobstering. If it wasn't so, men would fish when the prices were low and exhaust the supply, so that when they get high again there would be no fish. Off there!"—he pointed into the sea at the foot of Black Head—"is good ground;" then to himself, "If I only dared I'd go there to-night."

All the afternoon the lobster fishermen were busy getting their pots baited and lines ready, and when the appointed time came, and not one minute before, they pulled out, the quickest man to get the choicest ground. The women watched them from their cottages, for the moon was high and full. Some helped their husbands to prepare to start, but Ellen listened to the cold gale and prayed for Caleb's safety.

At two o'clock the returning fishermen huddled under the lee of the beach houses and counted noses. Twelve—eighteen—twenty-four—then a half hour's wait. Caleb Decker had not come. It was no use going out for him. The men straggled to their houses, hoping that the morning would find the young man safe at home, and John Spray said no word to his daughter, but went out before she was up and over to the Widow Decker's cottage. A drawn-faced woman met him at the door, and he asked no questions, but turned away.

Early the rescue party was made up and with many boats scoured the waters about the island, but returned in the afternoon.

Ellen spent the day in trying to console Caleb's mother. The day of long-drawn-out hope and disappointment wore on, and the two women watched and waited for the return of the rescue party. They clung to hope till hope died in their breasts, and then they clung to its ghost.

Late the sad-eyed widow led the tearless girl back to her father's house. They went into the little "best room" that had been prepared by Ellen's own hands for her wedding. It was hoped this would tap the wells of sorrow in the girl's heart.

At last the rescue party came up from the landing. "No hope," was written on each man's face. They stopped and got the clergyman, a blunt local preacher, to come with them to break the news to the women. But it needed no spokesman.

Solemn faced, they marched in and took chairs in the little "best room" and sorrowfully eyed Ellen and the widow. Thus the night fell. Finally, the preacher arose, and with formal sonorousness began to speak when Witless Walker, out of breath and white, broke in:

"There's a ghost on Black Head," he cried. "A ghost, a real live ghost!"

"Get out of this, Witless," said Parson Bates.

"But there's a ghost up there," persisted the man. "Oh, do come up!"

"Did you see it?" said Fisherman Littlefield.

"I didn't, but I was passing an' I hear some one calling. Then I looked and couldn't see no one, an' got skeart an' run."

A forlorn hope made the men catch at his words, but they hesitated.

"Come," cried Ellen, rushing out. "If he's lost, he'll tell us where to find him."

The men filed out after her and in a few minutes had reached the edge of Black Head. There they stood listening. The wind roared and the sea beat against the bluff, but no human sound met their strained ears. Ellen crept close to the edge, and, lying flat, threw her voice down the side of the rock. In a moment she lifted her hands to enjoin silence and shouted again. A faint "hello" came upward. It seemed from the very belly of the sea.

Another shout and another answer, even fainter than the first.

Two men were now at Ellen's side and strained their ears to catch the sound. They shouted in chorus, but no response. John Spray, who had run back to the village at the first shout, came with much rope, and many volunteered to make the descent. But the lightest man was chosen.

Over the edge of the bluff they lowered him, and with feet braced against the face of the rock he moved to and fro like a pendulum. Then he signaled "Stop," and a silence fell upon the men at the top. "Pull up!" came, and twenty men hauled with a will. They dared not hope, but they knew the burden was doubled.

Arms as tender as they were strong made a litter for Caleb, and Hank Stevens were one of the pairs. They carried him into the little "best room" in Fisherman Spray's cottage, and, there, amid much laughter and tears, Caleb told his story.

"It caught me," he said—"the gale caught me and upset the dory and I had to swim for it. It lashed me. I made shoreward, then the moon came out from the clouds and I saw Black Head just in front of me with the sea jumping half way up and breaking into foam, and I thought it warn't no use to try it—and then"—he looked around—"I prayed. I was powerful scared, and I prayed God to save me. A big wave washed me up against the rock and I tried to catch hold, but it was like a smooth wall. But I prayed all the harder, and just as I was about to give in, a bigger wave than any struck the rock and I heard a crackling, smashing, crushing, horrid sound and a fearful big piece of rock dropped into the ocean twenty feet away. Then I swam over and tried to get into the place. It must have been high tide, 'cause the next wave lifted me up and washed me into a cave six feet deep. I stood up, and every big wave washed up to my knees. Then the tide began to fall and I didn't know no more till the waves began to wash me again. I tried to get up but my knees were so stiff I couldn't and I just laid there and hollered. I must have hollered for two hours, and at last I heard you. By gum, but I was cold at first."

The local preacher consulted a well-worn pocket diary.

"Accordin' to tradition recorded," he said, "it was just a hundred years ago last night that Black Head gave a boulder to the sea."—Henry Irving Dodge.

Christmas Chimes.

Blow high, blow low! Across the snow
The joyous chimes are pealing;
With gladsome sound they bring around
A soft, forgiving feeling;
The loving cup to brim fill up
And toast to friends absenting;
With greeting sweet our loved ones meet,
With not a voice dissenting.

Blow high, blow low! Across the snow
We welcome wintry weather;
Let dame and sire around the fire
Remember past together;
Let youth from age learn lessons sage,
And profit by the teaching,
That Christmas cheer brings once a year
The mirth without the preaching.

Blow high, blow low! Across the snow,
Whilst Christmas bells are pealing,
The thankful heart shall joy impart
To those 'neath burdens reeling.
Let Christmas time with thoughts sublime
The seasons ne'er dis sever,
Through all the days the sad upraise,
Then joy shall last forever.

—Cecil J. Denton.

The Real Christmas.

An exchange remarks: "Many a happy parent is already planning a befitting Christmas for his own son or daughter. Let him pause a moment and think of the many little shavers that have no home, no kind parents to fill the stockings with good things that belong to this time of the year." To which might be added, if you have one child of your own to make you happy, think of the family that has half a dozen to provide for. Teach that one child the full meaning of Christmas by sharing his happiness with the less for-

tunate children of his neighborhood. To do for others less fortunate is the real Christmas — the coming of the Christ spirit in the heart.

The Lullaby Land.

The Lullaby land is a wonderful land
Not found on the maps of men;
For the dimpled hand of the Lullaby land
Knows nothing of pencil or pen.
And the only way you can reach this land
Is to take up the thread of years
And follow it back life's winding track
To a mother's smiles and tears.

And there you will find the Lullaby land,
With its Rock-a-Bye river of mirth
Flowing on the deep of Sleep, Baby, Sleep:
The sunniest ocean of earth.
And up the lake they call Wide Awake
Is many a goblin and fay,
And fairies and elves that swallow themselves
To frighten the people away.

Oh, a wonderful land is the Lullaby land,
Where little wee folk are found,
Who only coo when they talk to you
And laugh with a lisp and sound.
Their hair is sunny, their eyes are blue
As the depth of a summer sky,
And their breath as soft as the wind aloft
When a spirit goes floating by.

And these little wee folk have the funniest
ship,
That like a pendulum swings
In perfect time to the wordless rhyme
Of a song their mother sings;
And these little wee folk get into that ship
And go sailing and sailing away,
Exploring the streams of the land of
Dreams
All night till the break of day.

And when they get tired and long for a
ride,
No saddle or bridle have they,
But they mount in glee on their father's
knee
And go racing and chasing away.
Prancing and dancing with sway and
swing,
Of fears they have never a one,
For when their steed increases his speed
It only increases their fun.

Oh, isn't it cozy and rosy and rare
To live in the Lullaby land,
Where skies are blue and the sun shines
through
And life is so lovely and grand?
If I could but take my own choice to night
Of all the countries of men,
I would take up my stand in the Lullaby
land
And I never would leave it again.
— Alfred Ellison.

Little California Partridges.

The little hen partridge was far too timid to be trusted with her own eggs, for whenever in the least disturbed she would be booming off the nest, the eggs in imminent danger of being crushed. So they were placed under a clucking bantam hen, who proved to be a most excellent mother. Tinier birds can hardly be imagined than the little partridges, which hatched in three weeks. They were no larger than a good sized bumblebee and just about the same color. Yet three hours after hatching they ran so fast that it was difficult to catch them, and when cornered they would crouch flat, with head and body pressed close to the sand, resembling a little dried leaf or a tiny clod of earth. Their wings grew with astonishing rapidity, while for a week or two their bodies remained as small as ever. The bantam hen was a particularly small one, yet she looked gigantic when compared with those tiny bundles of down. One of them died when about two weeks old, and its body slipped easily into a half ounce vial. When about fifteen days old one escaped from its runway and went straight up into the air almost twenty feet. It was found necessary, in order to capture the little bird, to let the hen loose and wait until the mite of a partridge crept under her.

One very amusing thing happened daily. The partridges would snuggle under the bantam and gradually work up under her wings until close to her shoulders. When she stood up to feed she would naturally hold her wings more closely to her body than when

brooding, and as a result the little birds would be held prisoners in the hollow under her wing. Their little feet would dangle down and kick vigorously as their owners tried to get out. The hen could hear their peeping, and would look all around the runway for them, ignorant of their whereabouts. As she walked about or scratched she looked exactly as a person does who carries a bundle under his arm. Before long something would cause her to flap or stretch her wings, when the little fellows would drop out. They were comfortable enough in their unusual position, but the movements and clucks of the hen made them eager to get out.—Country Life in America, Christmas Annual.

Cliff Climbing.

Every cliff is climbable in some way, as Prof. Libbey has proved at the "Enchanted Mesa" in New Mexico, but not every cliff is to be climbed by ordinary methods, or with muscular effort unaided by mechanical contrivances. Yet few cliffs are as steep as they look to be, and many "inaccessible" places, so called, can be scaled by the means of good judgment and a cool head. The author was told that the walls of a certain canyon had never been climbed by man, at a time when he had climbed it in three places and had carried a gun up one of them. Looking from below, all slopes appear exaggerated, and the little inequalities of the rocks that afford support to hands and feet are invisible.

There is a great difference in cliffs of different sorts of rocks in regard to the facilities afforded to the climber. Limestone is much the best in this respect. It wears to a rough surface, it breaks in angular chunks and it does not crumble. Besides that, the limestone frequently occurs in beds of varying hardness, and these result in shelves along the face of the cliff, which greatly facilitates cliff climbing.

Granite cliffs are inferior to limestone for climbing. The surface is smoother, it crumbles more and different parts of the same cliff may vary greatly in these particulars. Sandstones are difficult to classify as a whole. Some of them nearly approach the limestone in firmness and reliability, while others are as crumbling and as dangerous as rock can be. The softer rocks seldom form cliffs, and a wall which is firm enough to withstand the assaults of the wind and rain is usually solid enough to bear the extra strain of a man's weight.

Cliffs of the harder volcanic rocks, such as basalt and obsidian, are seldom to be climbed. The surfaces are smooth and hard and the slope is often truly vertical.

The best and the safest climbing is upon bare rock which is absolutely free from anything else. This is a reason why cliff climbing is nowhere to be followed with greater pleasure and safety than in the Rocky mountains. Whatever appears upon the face of the cliff apart from the main mass of the rock wall should be regarded as a delusion and a snare. Loose rocks, gravel, grass, bushes, roots, branches of trees,

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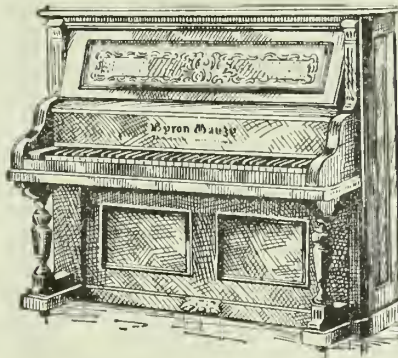
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PRICES:

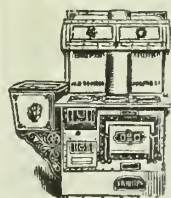
	12 inches	long,	\$ 9.00	per 1000.
14	"	"	10.00	" "
16	"	"	11.50	" "
18	"	"	12.50	" "
24	"	"	15.00	" "
30	"	"	17.50	" "

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moss and even moisture upon the rocky surface add immensely to the difficulties and dangers of an ascent.

Falling timber adds very greatly to the danger. It is impossible to tell how firmly a trunk is rooted or how much weight will upset its balance, except by actual experiment. After the experiment the knowledge is useless.

Many of the dangers supposed to be inseparable from cliff climbing are the result of improper clothing. Anything that will catch on the rocks or that will impede the free movement of the limbs is of course to be avoided, while the ordinary shoe is about as bad for the purpose as anything that could be devised. What is needed is something that, while protecting the foot from the rock, will adapt itself to all inequalities and give a firm support without slipping. The nearer the shoe approaches the conditions of the naked foot the better it is for climbing purposes. In case of danger it is a good rule to remove the shoes entirely. An observance of this rule once cost me a two-mile walk, stocking-footed, over the pebbles, but that was better than lying at the foot of the cliff indefinitely. The only thing I regretted was that I had no more sense than to throw my shoes to the bottom of the cliff, where they are yet, instead of tying them about my neck as I should have done.

In cliff climbing, as well as in mountain walking generally, it is a bad plan to depend on toes or heels. It is the sole which is intended for walking and climbing, and it is the best, the surest and easiest for the purpose. Besides it doesn't wear out the shoes nearly so fast.

Cliff climbing is up-hill work. There is no science of climbing cliffs downwards, and there is not likely to be until a man gets eyes in his feet so he can see where he is going. There are a great many cliffs which can be easily and safely ascended, but whose descent is an alternative between a fall and a jump. It is a good plan in cliff climbing to come down some other way, and a very safe precaution to take before making an ascent is to make sure that there is another and safer way down.

The most serious accident that I have known resulted from a lack of this precaution. A young man climbed to the summit of one of the cliffs at Cheyenne canyon, Colo., only to find himself on an isolated pinnacle of rock. To descend by the way he came was impossible. With great difficulty, and in deadly danger at every moment, he worked his way around to the opposite side of the conical rock, descending gradually, but finding no way to reach the level beneath. It was a long strain on muscles and nerves. The rock was so steep that a position could only be maintained by the use of both hands and feet, and the relaxation of muscles meant a certain fall. And end came with the gathering darkness. To stay through the night was an impossibility and aid was not to be expected. The only thing to be done was to diminish the inevitable fall as much as possible. He wrote a letter, placed it in his hat, and then started downwards. His last remembrance was of sitting and sliding towards the edge of the slope. The fall, as afterwards determined, was about fifty feet, though this was not a direct drop, but rather a sliding and rolling upon the rocks. When he regained consciousness the stars were shining and he was lying upon a gravel slope at the foot of the cliff. Just above and within reach of his hand were the branches of a spruce tree, which may have broken his fall. His clothes were badly torn and soaked with blood. He was generally bruised, scratched and cut. The worst injury was a compound fracture of the lower jaw, caused apparently by a blow from a projecting rock upon the point of the chin.

What good does it do? Cliff climbing is an amusement, like others. The chief object is not in the result, but in the doing. There are and have been professional cliff climbers, such as the cliff dwellers of early America and the hunters of Norway.

The chief charm in cliff climbing comes from the conquest of danger. That this is ever present, can not be denied; but with fearlessness and good judgment danger may be overcome and done away with.

The Markets.

General Market Conditions.

GRAINS AT CHICAGO.—Wheat has continued firm during the week, so far as the statistical outlook and conditions are concerned. Cash wheat has fluctuated 1½¢ and is ½¢ higher at close of this report than of the previous one.

Corn in Iowa is reported to have yielded 296,000,000 bushels against 227,000,000 last year, but to be only 47% good. Farmers are reported willing to sell, but movement limited by lack of transportation facilities. In Illinois the yield is reported 15,000,000 to 20,000,000 bushels more than last year.

CHICAGO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	76½@75½	77½@77
Thursday.....	75½@75½	76½@77½
Friday.....	76 @75½	77½@77½
Saturday.....	75½@75½	77½@77½
Monday.....	76 @75½	77½@77½
Tuesday.....	75½@74½	77½@77½

CHICAGO CORN FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	56 @56½	44½@44½
Thursday.....	56½@57½	44½@44½
Friday.....	57½@57½	44½@44½
Saturday.....	57½@56½	44½@43½
Monday.....	56½@55	43½@43½
Tuesday.....	55 @55	43½@43½

LABOR AND WHEAT.—Summarizing a long special article in a prominent Eastern farm journal, it may be said that Canada is gaining population at our expense. The official figures for the year ended June 30 last show 70,000 immigrants, of whom 22,000 were from the United States. The emigration northward into the fine Canadian wheat area is increasing. Crops in the Canadian northwest last year astonished everybody, the harvest being enormous and in excess of railway facilities for hauling it off. This year the prospect is for a still larger crop. One of the features of this Canadian harvest is the importation of 20,000 harvesters from Great Britain and Ireland. The agricultural and mineral resources of the dominion begin to impress the European imagination, especially since immigrants get a free gift of 160 acres, and can get more at nominal prices out of Canada's 75,000,000 acres of unoccupied wheat lands.

SAN JOSE ADVICES ON PRUNES.—Prominent officers of the Santa Clara County Fruit Union, on Dec. 10th, were quoted as follows: "The prices are on about a 2½¢ basis, with a premium of 1¢ on 40s and ½¢ on 50s. We are a little in advance of that, anticipating a better condition of the market. One dealer is holding for a 3¢ basis. We are holding for that, too; we may not get it right away, but expect to later on." In addition, there is little doubt that a syndicate of large packers very friendly to each other, practically the same as those who were the leading operators in raisins in 1901, have combined to buy and handle the balance of the prune crop not already in strong hands, as a speculation. The winnings of some of them in ventures of this kind in the last few years have been enormous. If reports of their own stories are accepted. Late New York advices as to prices are: "The sale of several carloads of 40-50s for December shipment, for account here, is reported to-day at 6½¢, f. o. b., in 25-pound boxes, and one car of 30-40s California stock is reported sold for the same shipment at 8½¢, f. o. b., in 25-pound boxes. Wires quote nothing offering below a 2½¢ f. o. b. four-size bag basis on the four sizes Santa Claras. In Oregon prunes, spot is unchanged and firm. A packer wires nothing offering in 30-40s, but business is possible in the four sizes on a 2½¢ four-size basis."

The records of the railroad freight office at San Jose show shipments to Dec. 7th of 40,000,000 pounds this year. It is said by Edward Richmond of the J. K. Armsby Co. that three-quarters of the production this year will go out of this country, and that it is but recently that the brokers in the East, who supply and contract with the foreign wholesale houses, have been interested and have pushed the sale of this fruit.

W. F. Bird sold his Imperial dried prunes last week to San Jose parties for \$900, over 80% of which brought 7¢ per pound. He had 7½ tons from 600 trees five years old, says the Sutter Farmer.

Cable inquiries from English markets for 40-60s are in hand for January shipments from the coast; but the packers are not willing to make contracts now for January shipment, as the market may be higher after the first of the year.

ORANGES.—Shipments from the central California region have almost if not entirely ceased. A good portion of the packing houses have been closed for a couple of weeks. Shipments from north-

ern California are also about done. The total of shipments from Tulare county to Dec. 11 was as follows: From Porterville, 313, lemons 4; Lindsay, 199, lemons 8; Exeter, 140, lemons 39; Sultana, 12; total 664, lemons 51, of which 197 carloads of oranges and 2 of lemons were from growers' exchanges, as against a total shipments of 641 cars of oranges and 111 of lemons from the same section in 1901, much of the lemon orchards, especially at Lindsay, having been budded to oranges since then.

Sanger growers netted about \$1.80 for Navel and \$1 for Seedlings per box. Shipments were about ninety carloads.

The first Tulare county car of the season, which brought \$1830, was from the A. D. Moore orchard at Exeter.

The Kaweah Lemon Co. of Exeter has received advices that the lemons it shipped from Lemon Cove Oct. 6 have been sold in Sydney, Australia, at \$4.50 per box and upwards.

The Fair Oaks Fruit Co., Sacramento county, shipped a carload of fine oranges East last week under "San Juan" brand.

RAISINS.—An editorial from a source usually in close touch with officers of the California Raisin Growers' Association says: "It is evident that the only basis upon which the Association can be permanently organized is by a growers' compact." The necessary details along that line are now being considered. Raisins are going forward in large quantities.

Col. Wm. Forsyth has sold out his interest in the Pacific Coast Seeded Raisin Co. for something like \$300,000, it is reported. It is also said that the seeded raisin business was done at cost this year, the only profit being the ½¢ reduction from association price to induce cleanup sale, in which reduction, owing to the way it was made by the packers, it is said Col. Forsyth did not participate. He is expected to enter the seeding business again independently of the "High Five," who bought him out.

The directors of the Raisin Growers' Association have sold 700 tons of seedless raisins to the packers to replace 2 crown shortage, at 4½¢ a pound, ½¢ under the list price, in competition with the Zante currant price in New York.

HOPS.—Apparently the most reliable reports arriving during the week relative to Oregon have given 46,000 shipped East, 23,000 in warehouses in the State, 12,000 in growers' hands, total 81,000 bales, which is 4000 less than previous estimates of the yield.

POTATOES.—San Jose Herald. "Los Gatos, Dec. 11.—Potatoes from Sonoma county were peddled on the streets of Los Gatos this week and sold for \$1 per sack. Many of our citizens took advantage."

Ah Luis will sell 20,000 sacks of potatoes from the Oso Flaco (San Luis Obispo) this year.

ALFALFA SEED.—Considerable information will be found in a special communication from Kings county.

A ten-day run of one thresher at Wasco on alfalfa for seed has just been completed.

HORSES.—The California Horseman says: "News reaches us from Chicago that the market is 100,000 horses short of the demand. Several large shipments of California horses to Eastern cities have been recently made."

NUTS.—Hughes Bos. have purchased of H. R. Schell of Knights Ferry three tons of English walnuts. The price paid for walnuts this season to growers averages 10¢ per pound.

TURKEYS.—Independent: Turkeys are quoted here (Yuba City) at 13¢ per pound, live weight. Those who have are holding for higher prices.

HAY.—Is advertised at Modesto, 50 tons Al alfalfa, for \$8 a ton.

San Francisco Produce Report.

SAN FRANCISCO, Dec. 17, 1902.

Knowledge of the movement of produce is given in the table below:

RECEIPTS AND EXPORTS.

Receipts of produce from California Interior for week were:

Flour, ½ sacks.....	163,963	Wool, hales.....	278
Wheat, centals.....	36,140	Broomcorn, hbls.....	12
Barley, centals.....	73,851	Hops, hales.....	127
Oats, centals.....	4,612	Alfalfa Seed, sks.....	10
Corn, centals.....	3,845	Flaxseed, sks.....	185
Rye, centals.....	710	Hides, No.....	2,859
Beans, sacks.....	7,657	Pelts, hals.....	2,615
Hay, tons.....	2,600	Wine, gals.....	407,950
Straw, tons.....	137	Butter, lbs.....	212,000
Potatoes, sacks.....	30,237	Eggs, doz.....	77,160
Onions, sacks.....	2,041	Cheese, lbs.....	61,800

From Oregon:

Wheat, ctls.....	86,240	Corn, ctls.....	450
Flour.....	8,750	Onions, sks.....	25
Oats.....	2,362	Cornmeal, sks.....	500
Potatoes, sks.....	2,761		

From Washington:

Flour.....	10,778	Bran, sks.....	10,292
Oats.....	18,930	Shorts, sks.....	609
Flaxseed, sks.....	4,113	Feed, sks.....	445
Potatoes, sks.....	1,533	Hops, bales.....	160

From East:

Corn, centals.....	450
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SEASONAL RECEIPTS OF PRODUCE.

Articles—	July 1, 1902, to Dec. 11, 1902.	Same Time, 1901.
Wheat, ctls.....	2,892,015	3,731,236
Barley, ctls.....	3,258,559	3,371,650
Flour, ½ sacks.....	2,580,092	2,315,882
Corn, ctls.....	24,440	40,390
Rye, ctls.....	93,601	50,827
Oats, ctls.....	175,410	334,489
Hay, tons.....	81,828	52,827
Hops, hales.....	10,972	8,405
Hides, No.....	102,513	79,005
Potatoes, sks.....	599,931	660,108
Beans, sks.....	457,765	466,201
Onions, sks.....	127,713	132,672
Wool, ba, etc.....	28,821	39,806

SEASONAL GRAIN EXPORTS TO DEC. 11.

	1902.	1901.	1900.	1899.
Wheat, ctls.....	2,563,833	3,328,558	2,668,076	1,841,015
Barley, ctls.....	2,660,274	3,039,666	1,342,011	2,919,824
Oats, ctls.....	50,537	136,801	77,191	22,728
Corn, ctls.....	25,163	8,250	1,454	6,454
Rye, ctls.....	62,300	28,982	71,348	54,235

WINE SHIPMENTS DURING NOVEMBER.

To—	Cases.	Gallons.	Values.
New York.....	19	101,746	\$166,373
Hawaiian Islands.....	227	50,057	21,059
England.....	18,570	6,835	6,835
Mexico.....	81	7,923	3,394
Brit sh Columbia.....	170	2,255	1,562
Elsewhere.....	61	29,740	12,450
Totals.....	558	609,291	\$211,673

The shipments in November, 1901, exclusive of the shipments to the Hawaiian Islands, were 115,736 gallons and 2652 cases, valued at \$53,423. There were no shipments to New York by sea in that month.

WHEAT.

The principal feature of the market on this line has been the reported payment of some \$65,000 by the Big Four for some 2400 tons of wheat not up to standard, delivered on December contracts and reported unofficially to be weevily.

Prices, either future or cash, have not changed materially during the week.

SAN FRANCISCO WHEAT FUTURES.

	—Dec—	—May—
	Op. Cl.	Op. Cl.
Wednesday.....	1 35 @1 37	1 39½@1 39½
Thursday.....	1 38½@1 38½	1 39½@1 40½
Friday.....	No sales	1 41 @1 39½
Saturday.....	1 40½@1 39½	No sales
Monday.....	1 38 @1 38	1 40 @1 39
Tuesday.....	1 36½@1 36½	1 38½@1 39½

Quotations for spot delivery have gone up a little and at date of report are:

No. 1 White.....	\$1 37½@1 42½
Milling.....	1 42½@1 50

BARLEY.

The home use seems to amount to 20,000 tons per month, at which rate the 147,350 tons in hand Dec. 1, of this year, would scarcely more than supply the home demand until the new comes into market.

Futures have ranged about 2c lower the past week than the week previous, and have also gone down about 3c during this past week. The cash market also fell from 1½¢ to 2½¢.

BARLEY FUTURES.

	—Dec—	—May—
	Opened Closed.	Opened Closed.
Wednesday.....	No sales	1 27½@1 27
Thursday.....	No sales	1 27 @1 25
Friday.....	1 21 @1 20	1 26 @1 24½
Saturday.....	No sales	1 24½@1 24½
Monday.....	No sales	1 24½@1 23
Tuesday.....	No sales	1 23 1 23½
Feed, fair to good.....	1 21¼@1 23¼	
Brewing and shipping.....	1 25 @1 27½	
Chevalier, fair to choice, nominal.....	1 55 @1 60	

OATS.

White Oats.....	1 27½@1 40
Black, for feed.....	1 20 @1 25
Black, for seed.....	1 25 @1 35
Red, common to choice.....	1 20 @1 30
Red, fancy.....	1 30 @1 35
Gray.....	1 25 @1 27½

CORN.

Considerable western is reported to have reached this market lately, but the effect on local prices is not marked.

Large White, good to choice.....	@1 50
Large Yellow.....	1 30 @1 50
Small Yellow.....	1 45 @1 52½
Egyptian, Brown.....	1 15 @1 25
Egyptian, White.....	1 25 @1 35
Western, sacked, yellow.....	1 30 @1 35
Western, sacked, white.....	1 32½@1 35

RYE.

Has appreciated slightly.

Good to choice.....	1 10 @1 15
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BUCKWHEAT.

Good to choice.....	1 75 @2 10
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FLOUR.

California, Family Extras.....	4 20 @4 45
Bak rs' Extras.....	4 10 @4 20
Oregon and Washington, Family.....	3 50 @3 75
Bakers'.....	3 50 @4 00

FEEDSTUFFS.

Millers' prices to wholesale dealers:	
Bran, ½ ton.....	18 00@19 00
Middlings.....	22 00@24 00
Shorts, California.....	19 00@19 50
Barley, Rolled.....	25 00@25 00
Cornmeal, coarse feed.....	30 00@31 00
Cracked Corn.....	30 50@31 50

HAY AND STRAW.

A few sales of choicest wheat hay at \$16.50 during the past week are reported; but indications are that the market has about reached the upward limit.

Choice Wheat Hay.....	15 50@16 00
Good Wheat Hay.....	14 00@15 00
Other grades same.....	11 00@13 50
Wheat and Oat.....	11 00@14 00
Wheat Oat.....	10 00@13 00
Second Quality Oat.....	9 00@11 50
Barley and Oat.....	9 00@11 00
Alfalfa.....	9 00@11 50
Straw, ½ bale.....	45 @60

BEANS.

We doubt the report that all the yield of this year has been secured by the dealers. The natural effect of such a report on individual and isolated growers would be to assist dealers in getting such control, which would justify it from their standpoint. Beans will go up, and growers who have them and can easily do so will do well to hold them a while longer. It is also reported that the stock of red kidney beans (here in the city) is in the hands of one dealer.

Prices to producers for choice round and carload lots on wharf, city:

Pea, 100 lbs.....	3 25 @3 50
Small White.....	3 15 @3 30
Lady Washington.....	2 75 @3 10
Pinks.....	2 40 @2 75
Bayos.....	2 60 @2 85
Red Kidney.....	4 00 @4 50
Limas.....	4 25 @4 35
Black-eye Beans.....	3 85 @4 10
Garbanzos, large.....	2 50 @2 85

PEAS.

Jobbing prices:	
Green Peas, California.....	1 85 @2 00
Niles Peas.....	2 50 @—

SEEDS.

For choice seed to producers, dealers quote:

Alfalfa, Cal.....	10 50@11 50
Flax.....	2 @2½

The following are selling at:

Broom Corn, ½ ton.....	12 00@15 00
Canary, in original packages.....	4½ @4½
Rape.....	1½ @2½
Hemp.....	3½ @4

POTATOES.

The situation remains practically unchanged, except that a good demand is reported for Early Rose for seed.

Jobbing prices:	
Burhanks, Salinas, ½ cental.....	90 @1 10
River Burhanks, good to select, ½ cental.....	40 @55
River Reds, nominal, ½ sack.....	40 @50
Merced Sweet, ½ cental.....	1 25 @—
Oregon and Yakima.....	75 @1 05
Early Rose.....	75 @85

VEGETABLES.

The suggestion that tomatoes from Los Angeles sell better in crates than in boxes, having less competition in the former package, is worth the while of growers to consider.

Commission merchants report realizing for:

Beans, Lima, ½ lb.....	6 @7½
Beans, String, ½ lb.....	8 @11
Beans, Wax.....	8 @10
Cabbage, choice garden, ½ 100 lbs.....	50 @75
Celery, May Field, ½ doz.....	50 @—
Sprouts.....	5 @—
Egg Plant.....	10 @12½
Garlic, ½ lb.....	2 @2½
Onions, large select, ½ cental.....	75 @85
Peas, Sweet garden, ½ lb.....	5 @7
Peppers, Chile, ½ box.....	60 @75
Peppers, Bell ½ box.....	60 @75
Squash, Summer.....	1 25 @1 50
Squash, Marrowfat, ½ sack.....	40 @50
Squash, Hubbard, ½ sack.....	40 @50
Yellow Pumpkins, Eastern, ½ sack.....	50 @65
Tomatoes, ½ large box.....	75 @1 50

LIVE STOCK AND MEATS.

The market for large hogs and for calves is rather better; for sheep hardly as good as last week.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, ½ lb.....	7 @ 7½
Beef, cows.....	6 @ 7
Veal, large, ½ lb.....	8½ @ 9
Veal, small, ½ lb.....	9 @ 10
Mutton—ewes, 8@8½; wethers.....	8½ @ 9
Lamb, ½ lb.....	9½ @ 10
Hogs, dressed.....	8½ @ 9½

POULTRY.

Part of last week the poultry market was good for growers and prices firm; but for the last few days demand has been less, rather demoralizing prices. Turkeys have been in light receipt. Some have gone into cold storage. Present demand is sharp for live turkeys, but is expected to move toward dressed. Fancy young stock only in other lines finds ready sale. It is expected that Christmas market will be about the same as that for Thanksgiving, with only eight or ten cars of Eastern against sixteen or seventeen last year.

Small broilers should weigh from 1½ to 2 lbs.; large broilers, 2 to 2½ lbs.; fryers, 2½ to 3 lbs. at the highest; all over that go as young roosters if they have no spurs and the breast bone is soft. Dealers quote prices for

Turkeys, alive, choice young.....	16 @ 18
Turkeys, alive, Hens, ½ lb.....	16 @ 18
Turkeys, alive, Gobblers, ½ lb.....	16 @ 18
Turkeys, dressed, hens.....	17 @ 20
Turkeys, dressed, gobblers.....	17 @ 20
Hens, California, ½ dozen.....	4 50 @ 5 00
Roosters, old.....	4 50 @ 5 00
Roosters, young (full-grown).....	5 00 @ 5 50
Fryers.....	4 50 @ 5 00
Broilers, large.....	4 00 @ 4 50
Broilers, small to medium.....	3 00 @ 3 50
Ducks, old, ½ dozen.....	3 00 @ 4 00
Ducks, young, ½ dozen.....	5 00 @ 6 50
Geese, ½ pair.....	1 50 @ 2 00
Goslings, ½ pair.....	1 50 @ 2 00
Pigeons, old, ½ dozen.....	1 00 @ 1 12½
Pigeons, young.....	1 50 @ 2 00

BUTTER.

The market for California butter has been in a weak condition the past week, which is perhaps but natural to this season of the year, with stocks unequally distributed between dealers. Low grade and Eastern stocks have not been plentiful for some time.

Commission merchants quote sales at:

Creamery, extras, ½ lb.....	29 @ 31
Creamery, firsts.....	28 @ 28½
Dairy.....	27 @ 28½
Store, nominal, Cold Storage.....	27 @ 29
Western.....	27 @ 29

EGGS.

Commission merchants quote sales at:

California, select, large, white and fresh.....	35 @ 36
California, select, irregular color & size.....	32½ @ 34
California, good to choice color.....	22 @ 27
Eastern.....	22 @ 27½

CHEESE

Cheese had an upward tendency.

Commission merchants quote as returning for:

California, fancy flat, new.....	15½ @ 16½
California, good to choice.....	14½ @ 15
California, "Young Americas".....	16½ @ 17
Eastern.....	17 @ 17½

HONEY AND BEESWAX.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.....	6 @ 6½
Extracted, Light Amber.....	5 @ 5½
Extracted, Amber.....	4 @ 4½
White Comb, 1 lb frames.....	11½ @ 12½
Light Amber.....	10 @ 11
Dark Comb.....	5 @ 6½
Beeswax, Good to choice, light, ½ lb.....	26 @ 27½
Strictly fancy light.....	29 @ 30

HOPS.

Buyers are paying for:

Washington and Oregon.....	25 @ 26
Sacramento.....	24 @ 25
Russian River.....	24½ @ 25
Sonoma.....	25 @ 27

WOOL.

Defectives are now in good demand.

Dealers' prices are:

FALL.....	12 @ 15
Humboldt and Mendocino.....	10 @ 12
Plains, defective.....	7 @ 9

BAGS AND BAGGING.

Jobbing quotations are:

Calcutta Grain Bags, buyer June-July.....	5½ @ 5½
Calcutta Grain Bags, spot.....	5½ @ 6
San Francisco Grain Bags, 22x36, spot.....	5½ @ 5½
San Quentin Bags, ½ 100.....	5 55 @ 5 55
Wool Sacks, 4 lbs.....	34 @ 35
Wool Sacks, 3½ lbs.....	31 @ 32
Fleece Twine.....	7½ @ 8
Gunnies.....	13 @ 14
Bean Bags.....	4½ @ 5
Fruit Sacks, cotton, three qualities.....	6, 6½, 7
Fruit Sacks, Jute.....	6 @ 7½

FRESH FRUITS.

The market in all lines is very dull. Persimmons and Tangerine oranges are abundant and a drag.

Commission merchants are realizing for:

Apples, fancy, ¼ 4-tier box.....	1 00 @ 1 50
Apples, good to choice, ½ 50-lb. box.....	60 @ 85
Apples, common to fair, ½ 50-lb. box.....	25 @ 50
Raspberries, ½ chest.....	6 00 @ 12 00
Pears, Winter Nellis.....	50 @ 1 25
Pears, other kinds, ½ box.....	40 @ 75
Persimmons, ½ box or crate.....	50 @ 60
Pomegranates, according to box.....	90 @ 2 25
Quinces, ½ box.....	40 @ 60
Strawberries, Longworth, ½ chest.....	13 00 @ 15 00
Strawberries, Large, ½ chest.....	3 50 @ 5 00

DRIED FRUITS.

Jobbing quotations are:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, fancy,	7	@	7½
Apples, standard to choice.....	5	@	6
Apples, sun-dried.....	4	@	4½
Apricots, Moorpark, choice only.....	7	@	9
Apricots, Royal, good to choice, ½ lb.....	6	@	7
Apricots, Royal, fancy.....	8	@	8½
Figs, 10-lb. box.....	80	@	1 15
Nectarines, ½ lb.....	5	@	6½
Peaches, unpeeled, fancy.....	7	@	7½
Peaches, unpeeled, choice.....	5	@	5½
Pears, halves.....	5	@	10½
Plums, pitted.....	5	@	6
Plums, unpitted, ½ lb.....	1½	@	2½
Prunes, Silver, good to fancy.....	4½	@	8
Prunes, in bags, 4 sizes, 2½ @ 3; 40-50s, 5½ @ 5½c;			
50-60s, 4½ @ 4½c; 60-70s, 3½ @ 3½c; 70-80s, 2½ @ 3;			
80-90s, 2½ @ 2½c; 90-100s, 1½ @ 2c.			
Figs, White, in bulk.....	6½	@	7
Figs, Black, in sacks, ½ lb.....	4½	@	5½

CITRUS FRUITS.

The auction company held its first session Monday of this week and sold six carloads of fruit, which brought for Fancy Navel, \$1.50 @ \$2.25 per box; Choice, \$1.35 @ \$1.75; Standard, 75c @ \$1.40; Choice Seedlings, 75c @ \$1. These are much higher than the opening prices of 1901.

Prices given below are for ordinary commission sales:

Oranges, Navel, fancy, ½ box.....	2 00 @ 2 50
Oranges, Navel, choice.....	1 25 @ 1 75
Oranges, Seedlings.....	1 00 @ 1 25
Tangerines, according to box size.....	75 @ 2 00
Jaffas.....	1 25 @ 1 50
Lemons—California, fancy, ½ box.....	2 00 @ 2 50
California, choice.....	1 25 @ 1 50
California, standard.....	75 @ 1 00
Limes, Mexican, ½ box.....	4 00 @ 4 50
Grape Fruit.....	2 00 @ 3 00

NUTS.

Jobbing prices are:

California Almonds, shelled.....	25 @ 26
California Almonds, paper shell, ½ lb.....	11½ @ 12½
California Almonds, soft shell.....	9½ @ 10
California Almonds, hard shell.....	7½ @ 7½
Peanuts, California, fair to prime.....	5 @ 6
Peanuts, Eastern, hand-picked.....	5 @ 7
Walnuts, soft shell, ½ lb.....	11½ @ 13
Walnuts, standard, ½ lb.....	9½ @ 11½

HIDES AND TALLOW.

There is a very fair demand for hides, especially calf skins; and indications of a settlement of the strike.

MISCELLANEOUS.

Features of the week outside our regular line of quotations in this market have been a drop of ½c on hams and 1c on bacon, the rise of 60% in the wholesale and from 16% to 20% on the retail price of sugar, and a second large importation of structural steel for building purposes by ship from foreign countries.

Corning Observer: "An order has been received for a shipment of 25,000 sacks of wheat. J. L. Gladden has commenced to fill the order."

Our friends will do us a favor by asking by letter for any marketing information which they desire and do not find in our reports.

NEW SUBSCRIPTIONS are the order of the day. The news agency at Dinuba, the postmistress at Oroqui and the postmaster at Reedley receive them for the PACIFIC RURAL PRESS.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING DECEMBER 2, 1902.

714,854.—WINDOW SHADE BRACKET—J. C. Barker, Seattle, Wash.
714,755.—LOCATING WATER—F. H. Brown, Los Angeles, Cal.
714,777.—SNAP HOOK—C. A. Buck, S. F.
714,678.—VEHICLE POLE CAP—B. M. Davis, Los Angeles, Cal.
714,886.—SHOW CASE—W. G. Flint, San Jose, Cal.
715,060.—BRAKE—R. B. Hain, Los Angeles, Cal.
715,066.—THRESHING—W. A. Hesse, Red Bluff, Cal.
714,695.—TRACTION DEVICE—A. A. Honey, Tacoma, Wash.
714,915.—CAR BRAKE LEVER—W. C. Keithly, S. F.
715,095.—DEPTH INDICATOR—H. S. Lathrop, S. F.
714,922.—WRENCH—W. Lee, Los Gatos, Cal.
714,809.—NUT LOCK—J. H. Leonard, Woodland, Cal.
714,719.—JAR CLOSURE—J. M. Long Jr., S. F.
714,929.—GAS GENERATOR—W. S. May, Clifton, Ariz.
714,936.—FORK CROWNS—Muller & Jackson, Oakland, Cal.
715,122.—CHECKING APPARATUS—A. Nelson, S. F.
715,141.—OIL WELL WATER CHECK—W. Plotts, Whittier, Cal.
714,961.—EJECTOR—T. S. Smith, Los Angeles, Cal.
715,224.—EDUCATIONAL APPLIANCE—C. E. Wheeland, Seattle, Wash.
714,985.—OIL BURNER—J. M. Wishart, Pasadena, Cal.
714,989.—GRAPPLING TOOL—H. A. Worthington, Los Angeles, Cal.
715,188.—STOVE—R. Young, Tacoma, Wash.

FOR BEEF.—Hanford Journal: Cattle for beef are being shipped in by the train load, and still there is plenty of feed for more.



If you have any doubt about the penetrating and preserving qualities of P & B Paint, we wish you would test it. Give it every satisfactory test your work requires, compare it with other paints and try it with acids, cold, heat, smoke and every other destructive agency.

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PATENTS

Our U. S. and Foreign Patent Agency presents many and important advantages as a Home Agency over all others, by reason of long establishment, great experience, our Washington branch which tends exclusively to our business before the Patent Office, intimate acquaintance with the subjects of inventions in our own community, and our most extensive reference library, containing official American reports since 1790, with full copies of U. S. Patents since 1872. All worthy inventions patented through DEWEY, STRONG & CO.'S Patent Agency will have the benefit of a description in the *Mining and Scientific Press*. We transact every branch of patent business, and obtain patents in all countries which grant protection to inventors. The large majority of U. S. and foreign patents issued to inventors on the Pacific Coast have been obtained through our agency. We are conservative and counsel preliminary examinations in cases of doubtful novelty. Guide to inventors sent on request.

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(ESTABLISHED 1860.)

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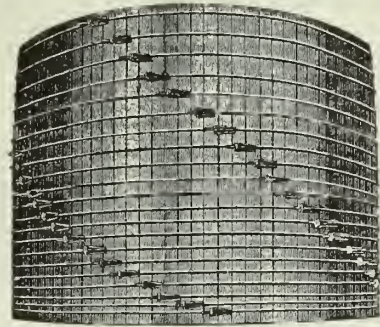
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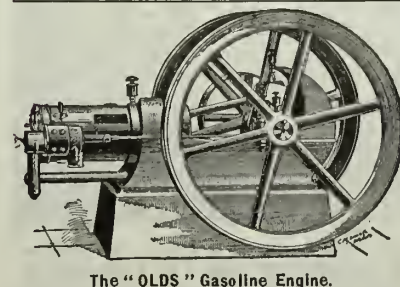
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Dr. S. A. TUTTLE, 33 Beverly St., Boston, Mass.
457 O'Farrell St., San Francisco, Cal.
Beware of so-called Elixirs—none genuine but Tuttle's. Avoid all blisters; they offer only temporary relief, if any.

The Liquidation of the Prune Association.

W. T. Lyon, C. W. Childs and E. T. Pettit, with their attorney, J. R. Welch, went to the offices of the California Fruit Association in San Jose, on Dec. 11, and presented to its officers 2580 requests to dissolve the Association and appoint the three first-named persons as liquidators to wind up the affairs of the Association. A neatly bound bundle about 3 feet in length was presented by Mr. Welch in behalf of the liquidators to Secretary Pollard with an affidavit of Frank C. Scherrer, his clerk, that copies of such request had been filed with Henry A. Pfister, the county clerk. Notice was also served on the treasurer not to pay any further drafts or orders on the Association.

When Mr. Wood arrived at the offices of the Association, the request was presented to him as the head executive officer of the Association. Jackson Hatch, attorney for the Association, was present at this meeting and advised the president to call a meeting of the board of directors for December 17 at 11 A. M. to consider whether or not the officers should turn over its affairs to Messrs. Lyon, Pettit and Childs or resist the liquidation.

On next Wednesday the liquidators are invited to appear before the Board and present their formal claim and demand for the possession of the books and property of the Association. The general impression prevails that the officers and directors will not resist the plan of liquidation so overwhelmingly sanctioned by the members.

Until Wednesday, Dec. 17, matters were to remain in statu quo. The liquidators claim that all powers of the Association have ceased by their filing with the president and secretary the requests of more than two-thirds of the members, and also placing a record of such filing in the county clerk's office.

Important Dairy Convention.

The third annual convention of the California Creamery Operators' Association will be held in the hall of the former San Francisco Dairy Exchange, 40 California street, San Francisco, on December 26-27, 1902. There will be four sessions full of interesting addresses and discussions. The opening will be at 9:10 A. M. Friday, Dec. 26.

The final one of four butter contests being conducted by the Association will take place at the Convention and will be open for all creamery operators to enter. In addition to the championship prizes offered for the highest and second highest average scores in the four contests, cash prizes amounting to \$125 will be divided pro rata among 25% of all the entries in this final contest who stand at the head of the list. Wm. H. Saylor, secretary, 114 California street, will send circulars of the Convention to all who apply for them.

READERS will welcome to our advertising columns the announcement of C. B. Carrington of Haywards. Mr. Carrington has the distinction of owning the White Leghorn "Oakland"—the highest scoring cock of the recent Oakland show.

THE Petaluma Incubator Co. has opened a large store and warehouse at 33 Market street, San Francisco, where a full line of poultry keepers' specialties will be found.

Alfalfa Seed Near Tulare Lake.

TO THE EDITOR:—Seed raised near Tulare lake is in brisk demand, as the lake seed is always free from foul seed. Mr. Amazira Clark, from near Reedley, was at Hanford last week and bought of Dr. Dixon half a ton of seed, for which he paid 9½ cents per pound. J. Goldman was in Hanford wanting to buy seed. Robert Dougherty sold one ton of seed to J. W. McCord; price, 8 cents, in grain sacks. We hear of some enormous yields of seed from the Summit Lake country. There will be a great deal of land seeded to alfalfa on Tulare lake this season. Seed is high, but alfalfa pays to raise on land suited for it. All over the fields on the lake is to be seen the young volunteer alfalfa coming up. This is one advantage of the lake country for alfalfa. It reseeds, and there are alfalfa fields that have been sown fifteen years and are still a good stand.

Hanford.

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has never been appreciated as it is at the present time. This being a fact, I look upon the success of my Health Tablets as evidence that honesty is what the people want. This remedy has been advertised very little, but the goods, being honestly made, have been recommended by people until the sales run into the millions. I have confidence in mankind as I have in my remedy, and I believe that if I treat you fairly you will treat me the same. I have taken chances in thousands of cases of dealing with people whom I trusted to their honor to pay me after they have been convinced that my remedy is all that I claim for it. I am now going to make the same liberal offer to you. Just drop me a postal card and I will send you a full size package of my Health Tablets and you need not pay for them until you are thoroughly satisfied that they are the best remedy you have ever tried, for the ailments for which I recommend them. It is a common saying: "Take Baldwin's Health Tablets to-night and you will be well to-morrow." It is true, so write me to-day and I will endeavor to send you the tablets to-morrow.

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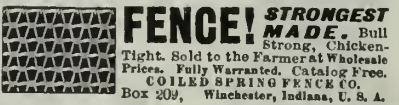
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It gets more and better cream.
It makes more and better butter.
It takes less time and labor.
It turns more easily and cleans more easily.
It requires less oil and fewer repairs;

all because it is so simple in construction and so perfectly made. Get free catalogue No. 131 **SHARPLES CO.,** P. M. SHARPLES, Chicago, Ill. West Chester, Pa.
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10-inch, 12-inch and 14-inch.
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This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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9 SHORT-HORNED DURHAM BULLS FOR SALE. Address E. S. Driver, Antelope, Cal.

BULLS.—Devons and Shorthorns. All pure bred and registered. Fine individuals. At prices to suit the times, either singly or in carload lots. Oakwood Park Stock Farm, Danville, Cal.

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Pasteur Blackleg Vaccine ready for use. **EACH DOSE SEPARATE.**

Single Blacklegine (for common stock): 10 dose box, \$1.50; 20 dose box, \$2.50; 50 dose box, \$6.00. **Double Blacklegine** (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit for applying Blacklegine, 50 cents.

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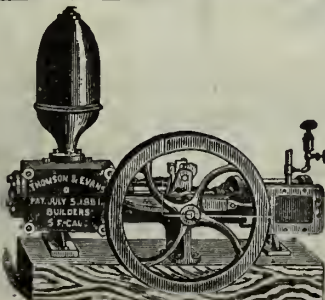
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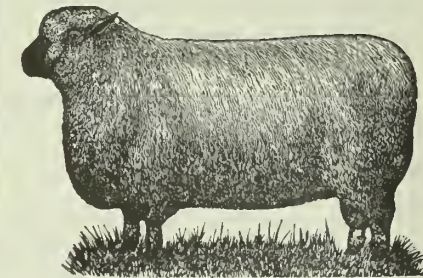
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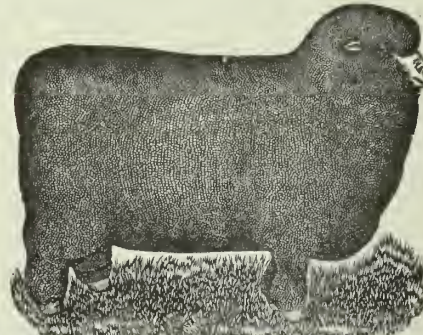
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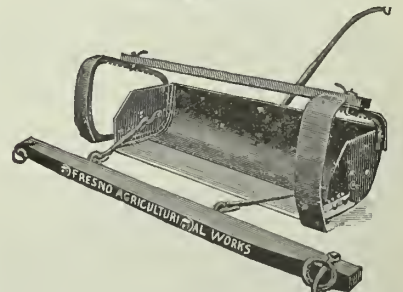


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Tulare County's Orange Belt.

There are 5455 acres in citrus fruits planted in Tulare county, says the Porterville Enterprise, of which 2000 acres are in bearing, and from which about 900 carloads were shipped last season. The net profits averaged about \$350 per car, which makes a total of \$315,000 profit for the citrus crop of last season. This averages about \$157 per acre for the Tulare county acreage in bearing.

Of the total acreage planted of all ages, 4100 acres are in Washington Navel, 175 acres are seedling, 150 acres are Valencia Late, 950 acres are in lemons and about 75 acres are in tangerines, pomelos, etc. The acreage is distributed through the thermal belt as follows; Porterville 1550 acres, Lindsay 1800 acres, Exeter 1080 acres, Lemon Cove 600 acres, Antelope Heights 350 acres, Antelope Valley 50 acres and Orosi 15 acres. It is ascertained that about 800 acres were planted to citrus fruits last spring.

The estimated yield for 1902-03 is given as 1300 carloads, while five years hence it is thought there will easily be from 3500 to 4000 cars shipped.

A Warm Belt in the Marysville Buttes.

Everyone who has driven about in the night in this region, says the Gridley Herald, has experienced the peculiar phenomenon of running into a warm belt where the air is very hot and often oppressive. It is especially common in the flat plains country of this valley. No really satisfactory explanation of it has been made, as it occurs when there is wind blowing as well as during occasions of calm. The lines dividing the hot and cool areas are sharply defined, and in going 15 feet the difference is very marked.

W. A. Rhinehart, of the Pugh ranch in the Butte mountains, relates that in the canyon leading up to his place there is such a belt that is not only constant in its temperature, but is particularly noticeable in winter. The warm belt is about 100 yards wide, and he says it is his frequent custom when riding home on cold nights to stop his horse when he reaches the place and warm up. He has never explored the place to get any idea of the linear extent of the warm belt, but he has passed through there dozens of times in the night and he notices that the temperature begins to raise at a certain point on every occasion, and it continues until he has driven about 100 yards, when the temperature drops to the normal point.

THE KIND OF SEEDS THAT YIELD

Like everything else there are good seeds and bad seeds. Seeds that grow and seeds that don't grow; seeds that yield and seeds that don't yield, and a little thought given now to the selection of the seed you'll need, will be found time well spent, though realized much better at the harvest if you select this world-famed Ferry's Seeds the kind that always yield. For nearly half a century Ferry's Seeds have been known and sown wherever good crops are grown, until farmer and gardener alike, have learned to depend upon their wonderful growing and yielding qualities, year after year, to the exclusion of all others.

Unfortunately the seed business seems to afford a means for many unscrupulous people, who aim to blind the unwary to quality, through littleness of price and boastful claims; who in reality have nothing to substantiate their claims, no reputation at stake, no past record as proof. It is better to pay a little more for the seed and be assured of a great deal more at the harvest by sowing Ferry's Seeds. The 1903 Seed Annual which is sent free, postpaid, will be found unusually interesting and instructive. Write for it to-day. Address, D. M. Ferry & Co., Detroit, Mich.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

MORE OIL ON ROADS—Chino Champion: The Board of Supervisors on Monday apportioned \$20,000 of the road money from the present fiscal year's taxes to be used exclusively for the purchase of oil for the county roads during the year.

A Word of Good Counsel—When days are bleak and nights are long and cold, keep Perry Davis' Painkiller in the house. It is your faithful friend, as it was your parents' friend. External and internal use.

PROPOSED NEW COUNTY—The Los Banos Enterprise is advocating the creation of the present portions of Stanislaus, Merced and Fresno counties west of the San Joaquin river into a new county. There is no natural obstacle to it.



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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIV. No. 26.

SAN FRANCISCO, SATURDAY, DECEMBER 27, 1902.

THIRTY-FIRST YEAR.
Office, 330 Market St.

Other Mountain Forage Plants.

We have been drawn away for a few weeks from the interesting and important subject of plants affording valuable sheep forage in the Sierra region, as shown in Bulletin 51 of the Nevada Agricultural Experiment Station, to which we have often made favorable allusion. In their investigation, Messrs. Kennedy and Doten came upon the plants shown on this page, photographed them and gathered the herders' views upon their value to the sheep. The plants are all pretty and were our industrial trend so strong we should be tempted to discuss them as ornamental plants.

One is an "everlasting," commonly called "Cudweed" and botanically *Gnaphalium decurrens*. It is a rather stout plant, about two feet high, with the stems and underside of the leaves covered with a white woolly substance, and conspicuous clusters of glistening white flowers. It was found in considerable quantities in the region of Summit Soda Springs and Talbot's range, where it is considered very fair feed for sheep. The picture represents a characteristic patch of the everlasting at the base of a partly burned pine.

Another picture shows the graceful "Five Fingers"—*Potentilla gracilis*—and its name is as pretty as the plant. It is found on hillside meadows around



Meadow Mallow (*Sidalcea oregana*).



Meadow Rue (*Thalictrum Fendleri*).

Weber lake, Lincoln valley, etc., and sometimes forms a considerable part of the forage. The sheep eat the leaves and flowers with considerable relish. Meadow Rue has an exceedingly delicate and graceful habit and delights in partly shaded places around natural meadows. The sheep are very fond of it. The Meadow Mallow has pink flowers. It grows abundantly in lower meadows, occurring in dense patches three or more feet high. Sheep eat it in all stages of its growth, even the brown seed pods being inviting.



Five Fingers (*Potentilla gracilis*, var. *rigida*).



Everlasting ; Cudweed (*Gnaphalium decurrens*).

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E. J. WICKSON. Horticultural Editor

San Francisco, December 27, 1902.

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The Week.

We write in the midst of Christmas week and all the distractions of the season. Aside from joyful topics the subject which presses most closely upon our attention is that this issue closes Volume LXIV of the PACIFIC RURAL PRESS and the thirty-second year of its existence. This is a longer period than any other agricultural journal has existed in this State, as the PACIFIC RURAL PRESS is about twice as old, in continuous existence, as any other now published, and all which could claim prior birth disappeared before it was half grown. Another interesting fact is that its founders still have a personal representative in its ownership and its present editorship had a personal representative in its work twenty-seven years ago. The course of the journal has been steadily onward and it now draws upon a fund of experience which is very helpful in its effort to distinguish not only what is new but what is true to California conditions and for the promotion of all the varied phases of California agriculture. We fully appreciate the advantage of our reputation for sound knowledge and wise conservatism and rejoice in the position of guidance and trust which our readers award us. The work of the last half year is indicated in the index which occupies the last page of this issue and which is dedicated to thoughtful readers who gather up the volumes for reference and thus have always at hand and available myriads of facts about the best California practice as occasion arises for their use.

As it is becoming fashionable for great educational institutions to confer degrees in December as well as in May, we award the degree G. C. A. (Graduate in California Agriculture), to Mr. Thomas Yost, lately of King river, Fresno county. Mr. Yost has taken a full course of twenty years or more in the PACIFIC RURAL PRESS Agricultural College, accompanying the reading with field work in due measure. He is a veteran of the war of the rebellion, went from the field to mercantile pursuits, and then took up farming under the weekly instruction of the PACIFIC RURAL PRESS with such success that he has just sold out for enough to do him and his good wife for the rest of their lives. Upon this showing we graduate him G. C. A., with all the honors and privileges thereunto belonging.

The markets have the mid-holiday listlessness. Wheat and barley have lost edge since our last report and are quoted a little lower, also. Supplies of corn, oats and rye seem quite up to the demand, and hay is now coming in freely and is easier. Millstuffs are about the same as last week. Beef and mutton are quiet and hogs steady at the recent advance. Butter and eggs have continued their downward

course and cheese is easier. The Dairy Bureau is beginning the pursuit of the renovated butter mentioned last week. The State law takes care of it and the Bureau will enforce it. Poultry is selling well so far, although receipts are considerable. Five cars of Western dressed turkeys came in on Monday and more is expected. It is impossible to see how the week is going to end. Potatoes and onions are in large supply and dull, though sweet potatoes are selling quickly at an advance. Fancy apples and oranges have sold well, but prices are held steady by large supplies of common, which is worked off as far as possible. Dried fruits, nuts and raisins are in the holiday quiet. Honey holds its range, while hops and wool are strong, but transactions light.

The directors of the Cured Fruit Association have given the liquidators what the boys call the glassy eye. At a meeting the other day in San Jose, at which the liquidators' claim was formally heard by the directors, response was made by President Woods, on behalf of his associates, that the board of directors had unanimously adopted a resolution declining to recognize the authority of the liquidators in the premises or the obligation of said board to comply "with the demand in any respect, and that the demand is accordingly denied and rejected, and such steps as may seem necessary will be taken to resist any attempt upon the part of the liquidators to take into their possession any property, assets, business or affairs of the Association." This means that, instead of getting less law suits, the liquidation project has succeeded in making more fun for the courts and more fees for the lawyers. That is the way it now seems to be. Already the Association directors have begun back-firing by securing an injunction forbidding the liquidators to take possession of the book, assets and property of the Association. A San Jose paper says that apparently the claim will be made that certain parts of the law under which the Association is organized are unconstitutional and void, and that for this reason the members had no legal right to elect the three liquidators.

Our wool growing readers will take a sympathetic interest in the misfortunes of their Australian competitors of which they have known in general terms for the last few years. Definite measure of the affliction in New South Wales comes through the State Department. The facts are that in 1891 there were 61,831,416 sheep in New South Wales, the greatest number on record, and it is considered that the country was at that time overstocked. The total amount of wool said to have been produced in 1891 was 375,600,667 pounds. In 1894 there were 4,000,000 less sheep, but 4,000,000 pounds more wool. There has been an almost constant decrease in the number of sheep down to the present time. Owing to the drought, the past year has been the most disastrous of all. The total production of wool in New South Wales for 1900 is stated at 237,659,727 pounds, which is less by 137,940,940 pounds than in 1891. The export of wool from Australia in 1900 was 409,394,600 pounds; from New Zealand, 156,174,000 pounds—total from Australasia, 565,568,600 pounds. The estimated value of the clip was about \$88,500,000. The Australian wool growers are not cast down but expect to regain such figures. A new importation of American merinos was recently made.

Readers of the PACIFIC RURAL PRESS who desire to participate in the University distribution of seeds to those who will become co-operators in reporting and testing upon their value, should send at once for the pamphlet which describes the plants and the terms upon which they are furnished. This publication can be had free by addressing Prof. E. J. Wickson, Berkeley. This distribution has been maintained by the agricultural department of the University for nearly twenty-five years and many valuable things have been disseminated. This year's list includes tree seeds, grape cuttings, cereals, forage plants, the dry land lawn plant lippia, edible roots and garden vegetables. Each applicant must select for himself from the list furnished on application.

Consul-General J. P. Bray reports from Melbourne, Nov. 3, 1902, to the State Department, that there is a serious shortage in the grain yield of Australia, and that in consequence numerous inquiries are being made at that consulate-general with regard to im-

ports of wheat from the Pacific coast. Many shipments of American wheat have already been arranged for, and are in fact going out from this point. Ocean freights to Australia are so much of interest that they are quoted as prominently as freights to Europe. The trade is helping out the Pacific coast wheat growers considerably.

QUERIES AND REPLIES.

To Supplement Alfalfa.

TO THE EDITOR:—I have a home of three and one-half acres near the city limits of Fresno, two acres lately sown to alfalfa. I want to plant three-fourths of an acre to that which will produce the most and the best food for horse, cow and poultry. How will sugar beets do? Will it do to plant beets in rows amongst squash vines, where the vines will spread and cover the ground? My land is a light, sandy loam, to which I will add over a ton of well-rotted barn and poultry manure before plowing next month. Any advice that you can give me will be thankfully received. Possibly the information desired may have appeared in your paper. It is but recently that I became a subscriber to your valuable journal.—J. M. G., Fresno.

You can put in next month, if the weather comes fairly warm, seed of stock beets, either mangel wurzels or yellow tankards, and get a good start during the winter and spring, before it is safe to plant squash. The beets will be ready for summer feeding and can be taken out while the squash are still growing, and sorghum can be sown in their place if you can get in to irrigate and plow a furrow or two without injuring the squash vines. When the sorghum and squash are used up by the first fall frost irrigate well and put in more stock beets for winter feeding in connection with alfalfa hay. You can keep your land working pretty lively if you have water enough and select plants which will stand winter frosts and summer heat like those we have named.

Dwarf Fruit Trees.

TO THE EDITOR:—What stock can I use to get dwarf fruit trees—apples, pears, plums and cherries? Are many dwarf trees grown in California?—NEW COMER, San Francisco.

There is no single stock which will do for all the fruits you mention. The apple is dwarfed by the Paradise stock; the pear is dwarfed by grafting on the quince; peach and apricot trees usually grow smaller when budded on the Myrobalan plum, but the reduction is hardly enough to consider it a dwarfing stock. The same is true of the cherry on the Mahaleb instead of the Mazzard, which is chiefly used for the standard cherry trees in California. Plums can be dwarfed by grafting them upon the native wild plum of the Sierra Nevada mountains, but we doubt if any nurseryman has such trees for sale. The fact of the matter is that Californians care so little for dwarf trees and find so much more satisfaction and profit in standard trees that efforts for dwarf trees are not made to any considerable extent. You can get from the leading California nurserymen all that there is to be had in the line of dwarf trees in the State.

Growing Pepper Trees.

TO THE EDITOR:—When is the best time to transplant the pepper tree and prune same? Does pruning harm the pepper tree?—READER, Nordhoff.

The best time to transplant the pepper and other evergreen trees is after the ground becomes well warmed in the spring and early summer. Evergreens are frequently lost by transplanting when the ground is wet and cold and unfavorable for starting the growth which an evergreen should begin to make soon after transplanting. The only pruning a pepper tree requires is to give it a good shape, and it stands cutting to that extent without injury—in fact it seems to endure almost any amount of cutting.

Lime, Salt and Sulphur Wash.

TO THE EDITOR:—I noticed in Wickson's "California Fruits and How to Grow Them," that the direction is to prepare salt, lime and sulphur by boiling the same in soft water. I am just starting in to spray and have been to some expense to prepare for cooking this wash. The only way I can get soft water is to tear up my outfit and put it on top of the levee and pump out of the Feather river, all of which would cause me a lot of trouble and expense. This proposition of soft and hard water may explain why one job of spraying with which I am familiar was successful last winter and another was not. But as these jobs of spraying were performed on orchards

some 70 miles apart, some other thing than soft and hard water may have had to do with the different results obtained. As far as I have ever been able to learn other conditions were similar however. It is important to me to know if using hard water will endanger the success of my spraying.—READER, Marysville.

In the publication our reader refers to soft water is mentioned in connection with slaking the lime and dissolving the salt, and although soft water is better for these purposes ordinary well water is frequently used, and for making the wash there is no particular effort taken to get soft water, and orchardists use whatever water is available. If it were absolutely essential to get soft water there would be very little spraying done. If you have any choice of supplies and one is very hard, you would naturally take the softer one of the two. We doubt if the difference you speak of was due to the water; such differences are usually to be attributed to the thorough and continued boiling of the mixture in one case and lack of this boiling in the other. If you follow out the prescription as to fully boiling you need not give yourself concern about the water.

Sugared Prunes.

TO THE EDITOR:—I am posting you a sample of Petite d'Agen prunes, grown and dried on our own place. What is the cause of the sugar appearing on the outside, and what is the best way to prevent it? Quite a large portion of our prunes have become like this when kept, though some of them have remained clear in the skin. The quality seems to be quite as good as that of other prunes, but the appearance is somewhat spoiled. The prunes from which sample was taken were dried in the sun and afterwards processed with gelatine. Do you think that allowing the prunes to remain in the boiling lye too long has anything to do with it? Do you consider the sample to be overdried?—READER, New Zealand.

The fruit was evidently overtreated with the lye. When the sugar is dissolved away the flesh is seen almost bare. Lye dipping is to slightly crack the skin, not to rupture or remove it. The fruit was also overdried—it was apparently dry enough to rattle when taken out of the sun. Drying should not make the fruit hard; it should have some pliability under the fingers. So far as the sugaring goes, it could be removed with a hot water dip, but the sugar looks better than the surface which is uncovered.

Dormant Buds—Fruit Buds.

TO THE EDITOR:—Will it do to transplant seedling trees that were budded two months ago? Will a fruit bud inserted into a seedling stalk develop into a tree?—A SUBSCRIBER, Capay.

Yes, nursery stock is sometimes set in orchard in what is called "dormant buds"—that a bud which is seen by its plumpness and color to have "taken" but not started growth. Dormant buds are seldom used except where trees are scarce and planters do not wish to wait a year. The shoot from dormant buds are apt to be injured in orchard and some do not start, which makes some percentages of misses. One has also to be constantly on the watch for latent buds on the stock, which may start and outgrow the one you wish to make the tree, and there are other difficulties and dangers. Dormant buds are, however, sometimes very successfully used.

A fruit bud set in will usually make a blossom; sometimes it will develop a fruit all right. If there happens to be a latent leaf bud on the shield with this bloom bud it will make a shoot, but a blossom bud will not.

Citrus Trees Failing.

TO THE EDITOR:—I have one orange and one pomelo tree, standing about 25 feet apart, the leaves on each of which are all turning yellow. None of the surrounding trees are so affected. The trees are both young. The orange bore sixty-three oranges year before last, only a few last year, and scarcely any this. The pomelo is three years old, bore one last year and has five nice ones this year. Will you kindly tell me the cause of the leaves all turning yellow, and what is the remedy?—J. C. S., Los Gatos.

These trees may be failing because they have either standing water or bedrock too near the surface beneath them. Either excess of water or lack of adequate moisture might produce the effect you describe. The probability is that these two trees are in a naturally bad spot, and the nature of the trouble can be ascertained by digging down near the roots.

Buds Failing.

TO THE EDITOR:—Can you give me any indication as to the cause of Moorpark apricots not blossoming? The trees grow healthily and vigorously and make good spurs, but shortly before blossoming time the buds begin to fall off, and this is the second season such a thing has happened. It has been exceptionally dry all the winter and the trees have not been irrigated from May till September. Can this be the cause?—SUBSCRIBER, Renmark, Australia.

If the trees are vigorous in growth, they must presumably have moisture enough. We have trouble enough with the lack of bearing of the Moorpark, but the tree generally blossoms well enough. The only loss of buds "just before opening" which we know of, is caused by birds, chiefly the English sparrow and the house wren or red-headed linnet. Look in the list of bad birds on another page. These birds will dis-bud a limb in short order. Possibly some bud-loving birds may be operating with you.

Pistache Growing.

TO THE EDITOR:—Rev. A. Fuller of Auitab College, Turkey, is the guest of Rev. E. S. Williams of Saratoga for some weeks. Rev. A. Fuller lives in the Turkish village where the pistache nut is grown to perfection. He would like information from those who grow it in California as to their methods and success. He will be quite as willing to impart information as to seek it.—READER, Saratoga.

A few interested amateurs have been experimenting with the pistachio in California for many years, and there are a number of the wild trees which were planted years ago to be budded or grafted with the true pistachio. Some also have the latter tree established, but we have never seen or heard of any product of nuts. It may be a good time, with the assistance of Rev. Mr. Fuller, to see how we stand in the matter, if correspondents will tell us what they know of it.

Pruning Japanese Plums—Poor Figs.

TO THE EDITOR:—What is the best time for pruning the Kelsey Japan plum? Would it be right to prune it now? Why is it that some of the black figs are tasteless? I have a tree on the north side and it was loaded with figs, yet I could not use them on account of not ripening to any sweetness.—READER, Wrights.

You can prune the trees whenever your tools are sharp, from now until the new growth starts. Some figs are lacking a sweetness and flavor because they lack adequate heat, and that is the reason why coast situations generally are not the best for the fig. There are, however, some varieties which are worthless because of the defect you mention.

Ginseng Trade.

TO THE EDITOR:—As there is so much current about ginseng growing, I would like to know if there is any trade in the root in San Francisco?—READER.

We have often said that we had no idea that ginseng would be produced in any quantity in California, because the plant naturally chooses a shady place in a moist summer atmosphere to make its growth. Whoever remembers the atmosphere of moist woods at the East, in which the ginseng delights, will realize that California summer air is different. There is no ginseng handled by the jobbing druggists of San Francisco. Some Chinese firms handle a little, but nearly all arriving in this city comes from Cincinnati, billed through for export to China.

Cooking the Sugar Prune.

TO THE EDITOR:—Can you or any of your subscribers give me any information in regard to the Sugar prune? While attending the convention in San Francisco last week, I made inquiries and heard that it cooked into a mush under the same treatment that the Petite and Imperial remained whole. If this is so, it will not prove a success.—W. S. EDWARDS, Alma.

We can not answer; it is a good subject to gather experience upon. What have readers to say?

Filberts.

TO THE EDITOR:—Have any of your readers had any experience with filberts? If so, I would be glad to know how to plant and care for them.—H. G. K., Edenvale, Cal.

Mr. Felix Gillet of Nevada City is the only party known to us who is successfully growing filberts. Perhaps he will give us an article embodying his latest observations and experience.

Alfalfa Sowing.

TO THE EDITOR:—Will you kindly inform the writer through your paper when is the best time to sow alfalfa seed in lower Santa Clara valley, also number of pounds per acre to sow?—R. K. PATCHELL, San Mateo county.

Alfalfa can be sown after the first rains in the fall if the ground gets deeply moistened and the plants will make enough growth to stand ordinary frosts. Fall sowing is now done in the interior more generally than formerly. Where frosts are hard or rains heavy and cold it is better to sow after the heavy winter is over and the ground warms up. The seedling alfalfa is at first quite liable to frost killing, but after it makes a few more leaves it is hardier. Seeding ranges all the way from twelve to twenty pounds per acre.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 22, 1902.

ALEXANDER MCADIE, Forecast Official and Section Director.

SACRAMENTO VALLEY.

The weather was generally cloudy and the temperature below normal. Heavy frosts occurred in nearly all sections, but caused no damage to crops. Grain and grass were somewhat retarded by cool weather, but are still in good condition. Green feed is abundant, and stock are doing well. Plowing, seeding and tree pruning are progressing rapidly. Orange picking and shipping are practically completed, except for the local Christmas markets. The season has been very successful, over 400 carloads having been shipped from Oroville, Palermo and other stations. Buds on deciduous fruit trees indicate a heavy crop for the coming season.

COAST AND BAY SECTIONS.

Cool weather continued during the week, with heavy frosts in many places. Light rain fell in portions of the central and southern districts. No damage was done by the frosts, but the cool weather retarded the growth of grass and grain. Early grain continues in good condition and green feed is plentiful. Plowing and seeding are progressing satisfactorily except in some of the northern coast counties, where the soil on low lands is too wet for cultivation. Prospects are good for a large acreage of wheat, barley and oats. Stock are in good condition. Citrus fruits have not been injured by frosts, and are making satisfactory growth.

SAN JOAQUIN VALLEY.

Generally clear, cold weather prevailed during the week. Heavy frosts occurred frequently, but no damage is reported as all crops are harvested. Plowing and seeding are progressing rapidly, and early sown grain is looking well. In most sections the ground is in good condition for working. Orchardists are busy pruning and cleaning up. The orange crop has been harvested. The crop was good and of excellent quality. Green feed is making slow growth owing to the cool weather. Stock are somewhat thin, but strong and healthy.

SOUTHERN CALIFORNIA.

Somewhat warmer weather prevailed than during the preceding week. Light frosts caused no damage except to tender vegetation. Heavy rain fell in nearly all sections Tuesday, Wednesday and Thursday. The rain came at the most opportune time, and will be of the greatest benefit to all growing crops. The eastern part of San Diego county was flooded by the excessive rainfall, and some damage resulted. Oranges at Covina are coloring earlier than usual. Orange picking and shipping are progressing in many places. Early grain and green feed are in good condition.

EUREKA SUMMARY.—Heavy frosts checked the growth of grass, particularly on the high levels. Plowing and seeding are progressing on high lands, but bottom lands are too wet, and little work is being done.

LOS ANGELES SUMMARY.—Fine rains give promise of good crops. Grain and feed growing finely. Snow heavy in the mountains. Several frosts nipped tender vegetation.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Tuesday, December 23, 1902, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the Week.....	Minimum Temperature for the Week.....
Eureka.....	.74	20.34	15.08	15.99	58	36
Red Bluff.....	.26	12.24	9.68	9.38	54	32
Sacramento.....	T	5.29	6.04	6.61	54	36
San Francisco.....	T	5.16	5.80	9.14	56	42
Fresno.....	.00	3.11	2.17	6.23	56	32
Independence.....	.01	.83	1.35	1.77	52	22
San Luis Obispo.....	.00	4.98	4.56	5.65	68	32
Los Angeles.....	.00	4.90	2.46	6.41	70	42
San Diego.....	.00	6.07	.77	2.63	66	46
Yuma.....	.01	1.47	.22	1.62	66	40

FRUIT MARKETING.

California Deciduous Fruit Industry.

By MR. A. R. SPRAGUE, Manager of the California Fresh Fruit Exchange, at the Fruit Growers' Convention.

It may seem appropriate that some explanation should be offered for taking so broad a topic as I have chosen, but because I wish to speak of the development of the whole industry, and because I feel assured that the fresh fruit industry is seriously affected by the depression in the dried fruit industry, and vice versa, I shall ask your indulgence for some general remarks affecting the whole topic.

The importance of this industry to California should commend the interest of all. There are areas in the Union that produce a better quality of wheat and even a larger product per acre; other portions of the country, too, are extremely well adapted to livestock production; others to mineral productions, but I think we may fairly claim that nowhere else can fruit in such variety, and of such high quality be produced with such fair average success year by year. If this be true, the development of fruit culture should be the one dominant aim in California. Again, this class of production necessarily brings with it a dense population, which leads to a higher plane of living, so that for social considerations, as well as industrial, it is fair to indulge the hope that in some way fruit products in California may be safely extended toward their natural limit. At present the conditions of the industry are such that there is no thought of extending it, but everywhere there is felt, rather, the necessity of restricting the output. Any natural extension of the industry would require a steady demand for the product at moderately good prices; with this assured, the rest will follow.

Inquiry as to how far present conditions conform to the above requirements is hardly necessary, and time forbids a full statement of average net prices received by growers for different varieties of deciduous fruits for a series of years, but I am talking to a body of men to whom such a tabular statement would be superfluous, for all well know through recent years the markets have been most unsatisfactory, except during some year of unusually small crops here or in the East.

Another factor that can be considered in this connection is the tremendous extension of orchards in the East and South, which threatens a competition which will still further restrict our output. Certainly, if all causes now affecting the industry are to remain in full force, he must be an optimist, indeed, who would dare to increase his deciduous orchard holdings in California.

Granting then the unsatisfactory condition of the industry at present, we may set out to find its cause; as is usual in such cases no one influence produces the result.

THE DRIED FRUIT INDUSTRY.—The consumption of California dried fruit has not increased with the increase of population; among the many reasons which may be assigned for this I suggested the following as the most influential:

First—The excessive prices demanded by retailers.

While in an Eastern city last spring I took occasion to visit several of the larger retail stores in which California dried fruit was offered for sale, and I found that they were demanding 25 cents per pound for dried apricots and 20 cents per pound for dried peaches, of no better quality than the fair average of choice fruit produced in the Sacramento valley. This fruit could not have cost them more than 8 cents to 10 cents per pound delivered, and a fair profit, say of 25%, would have enabled them to sell it not to exceed 10 cents to 15 cents per pound. With such a price it is safe to say the demand for it would have been two or three times as great as it was. With the prohibitive prices which they demanded, only those families having money to spend somewhat freely could afford the luxury of California dried fruit at those prices.

The second prominent reason for the unsatisfactory demand for our dried fruit, I think it must be admitted, is the poor quality of much of the fruit marketed. This poor quality is owing in part to poor orchards, the result of a wrong location, bad cultivation, or poor pruning or thinning.

Another cause of unpalatable dried fruit is the result of wrong or excessive processing or bleaching. Most growers are quite familiar with the method used to bleach fruit. Most of the fruit arriving at the cutting table is either overripe or too green, but it is all cut because it costs a little less to do so than to use careful selection to determine what fruit is ready to cut for drying, for the owner places his confidence in the sulphur bleach, trusting that it will remove all blemishes, making all of uniform color and producing a fine looking and salable product.

An analysis of this bleaching process develops the fact that the bleach is not used to arrest the oxidation at the surface of the fruit, but the fruit is kept in the sulphur fumes until the tissue is all broken down, and the cup left by the pit is filled with juice. In this way it is found that in the more moist climates of the State fruit can be dried in a few days time

when otherwise it would be almost impossible to cure it.

This would indeed be quite satisfactory if the fruit was not intended for eating, but were to be used for decorative purposes merely. An inquiry into the nature of the process easily develops the fact that the burning of the sulphur produces sulphurous acid, the whitish choking fumes which are seen upon applying a match to sulphur.

EXCESSIVE USE OF SULPHUR.—Now, I do not stand here to advocate the abandonment of the use of sulphur fumes in bleaching fruit. It is clear to my mind that if sulphur is used with care and to no greater extent than is necessary to produce a fairly even and well colored dried fruit in a hot dry climate, and to prevent insect ravages, there would be but little objection to its use. In such cases a small amount of sulphur used is sufficient to arrest the process of oxidation or discoloration of the freshly cut surfaces of the fruit which would not be deeply penetrated with the sulphurous acid thus manufactured, and this small amount would wash off without impairing the flavor of it. I think such fruit, thus so lightly sulphured, would be objected to by no one (not even by the most critical of German consumers). Of course this would make it necessary to abandon the production of dried fruit in such portions of the State as are too damp to cure it by any such scanty use of sulphur bleaching, but such restriction of production would operate most favorably to the industry of the State, and in those particular regions the fine fruit produced, which is now dried, could then be canned, to the advantage of all concerned.

It may be urged that the larger part of the dried fruit now produced is not subjected to excessive sulphur bleaching, but it must be admitted that a very considerable portion is thus spoiled for anything but exhibition purposes, and this part clogs the market and discredits the whole.

The instruction usually given by the buyers to the orchardists are, "Sulphur all you can. You cannot make the fruit too light colored." "The Eastern people buy by the eye and not by the palate."

This would all be very well if the Eastern people would only continue to buy stuff which, when bought, they find they cannot eat, but unfortunately for us they refuse to do this, and consequently our dried fruit, which should be a prominent and most delicious dish found on every family table, is thus thrust aside for canned fruit, which is about six times as expensive, and the dried fruit remains a target for the jibes of facetious editors.

PACKING.—But we could not safely trust even our choicest dried fruit to the present methods of packing and marketing, with no regulated control over either on the part of the grower or the fruit.

The present packages most in use are injurious to the fruit, which is long exposed for sale and most inconvenient, both for the grower and the consumer.

The one-pound to five-pound carton is the proper package for dried fruit, for convenience, cleanliness, and the promotion of steady prices to consumer. It is not a sufficient objection to this to say that it has been tried and abandoned. What packages of breakfast foods would have pushed their way to general acceptance without more advertisement and promotion than fruit cartons have had?

I have thus dwelt upon the needs of the dried fruit industry, because it is by far the larger part of the deciduous fruit industry; but to keep the dried fruit production within reasonable limits it is most important that as much as possible of California fruit should be marketed fresh.

FRESH FRUITS.—This brings us to the discussion of the present condition of the fresh fruit industry. In a larger measure the above mentioned conditions tending to decrease the demand for dried fruits operate also to check the consumption of our fresh peaches, plums and pears, namely, excessive profits demanded by the retailer and the poor quality of much of such fruit sent East. For Tokay grapes which were sold to a retailer in a Western city for \$2 per crate he demanded \$4 per crate. The poor quality of fruit when it arrives in the East is often caused by delays in transit, which, of course, are attended with defective icing.

A car may take thirteen days to reach New York while the schedule time is nine days, and may still arrive in good condition if the delays are somewhat evenly divided along the line from Sacramento, but if a car takes three days between icing stations that are placed to reice cars running on a schedule of thirty-six hours, the fruit will be badly broken down. Such and much worse delays have been unpleasantly common during the past shipping season.

In the growing competition with eastern Oregon, Washington and Southern fruit our greater cost for freight and refrigeration is a most serious disadvantage, and some concessions must be made to the California fruit grower if he is to successfully compete with his growing rivals.

I know of no scheme by which all of the above mentioned difficulties can be at once eliminated and the great deciduous fruit industry of California be placed upon a constantly profitable basis; but one plan gives so bright promise of steadily growing success, that the fruit growers of the State may enter upon it with all confidence that steadily and strongly it will move forward to accomplish the redemption of

the fruit industry of California from the disabilities which now fetter it.

CO-OPERATION.—No individual effort is equal to the great tasks necessary to make safely profitable this great fruit industry. To whom then may we look to accomplish it? Evidently only to those most deeply concerned—the men who are most deeply interested in it, the men by whose toil and sweat this great output is produced—the growers. By co-operating they can move forward irresistibly to success. No need of any one being long in doubt as to what methods should be used. But one plan of organization has never disappointed those who have supported it. I need hardly name it, for it already has shown seven years of successful operation. The Fruit Exchange system rests upon the same principles as does our National Government—local control of local interests, with centralized control of general or common interests.

The local association assembles the fruit in car lots and the central office or exchange takes charge of and markets the same. Representatives from the local association form and conduct the central office or exchange.

All interests are homogeneous and hence all, while striving to best serve their own personal interests, are also best serving the interests of the whole organization—a condition impossible to any organization made up of growers and speculators.

The system is elastic and adjustable; it may be used with fresh or dried fruit or citrus products. It is the same system as that of the great Rochdale Co-operation in Great Britain, which does a business of three hundred millions a year, and numbers one-seventh of the population of that kingdom in its constituency. It has won continuous victories for the citrus growers in southern California, and has shown its perfect adaptation to the dried fruit industry in the same section. In the north, as the California Fresh Fruit Exchange, it has demonstrated that it is the method best adapted to serve the fresh fruit industry. It chases no rainbows, nor does it seek to control everything in sight all at once; but, moving upon safe and well tried business principles, it takes such good care of what business it has that steadily more business comes to it, and by this natural growth it will gradually come to a position of such commanding importance at last that it may achieve most of the aims desired by the California fruit grower. Not any one organization can accomplish this, but if each one uses the same general system all may be joined for common ends, quite as easily as the local associations into a central exchange. There is no duty and no opportunity confronting the fruit growers of California greater than that of co-operation.

WHAT CO-OPERATION HAS DONE.—Co-operation is the influence which is working more vast industrial changes than any other in the world to-day.

It has led to the consolidation of capital, with a mightier control than kingly potentate ever dreamed of—making scores of captains of industry willing to sacrifice their individual business plans and preferences and be led by one man, in order that all their common interests might wage protective and aggressive warfare upon all other interests. It has made progress steadily until now when no business but agriculture is not availing itself of this vast new found power.

But, greater marvel than all, it has fused into a compact whole masses of wage workers most diverse in birth, disposition, education and environment, making them willing to suffer not merely the loss of personal preferences, but hunger and cold for themselves, and, what is far worse, the sorest privations by their wives and children. And for what? In order that their co-operation may not fail. What was it that drew from ranks of workmen all over the world such generous sums from all too scanty savings for the suffering families of workmen in the anthracite coal fields?

Was it not that the right of the workmen to co-operate had been denied by one of the greatest combinations of capital in the world with other vast interests consenting?

Was it not because they had tested and proved the advantages of co-operation in wringing from reluctant employers a fairer wage, making life better worth living?

Was it not because they had felt the abject helplessness of the individual laborer when in the presence of corporate influence so organized as to seem omnipotent, and—with its pitiless black list—omnipresent?

These men have testified to the value of co-operation. They, too, have revealed its primary and essential law—that only as one is willing to most freely sacrifice to secure the success of all, does he truly co-operate—that only as he puts all his strength with that of his fellows, can he hope for success; and to succeed means stable wages and honorable, independent toil, while to fail means to become again the abject and servile supplicant for the right to live, receiving from impersonal and hence unfeeling corporations such dole of wages as may sustain the gradually lowering scale of living.

THE APPLICATION.—Now, fellow growers, the individual California fruit grower is as powerless to help himself as is the poorest wage worker. Not a single evil afflicting the industry can he individually remove

nor bestow one benefit. Acting singly, he is as one possessed by a frightful nightmare, with feelings all intensified, but denied the relief of courageous action.

He sees his orchard, which perchance has swallowed up the savings of years of toil and self-denial, depreciating constantly in value, as year by year it yields him a more precarious living. He knows that with every month that passes some competing fruit area is pushing a serious competition with California fruits. He knows, too, that while he is abjectly irresolute, growers in other States are welding themselves into compact organization to achieve and maintain their commercial superiority.

He knows that if he will but avail himself of methods of co-operation of proven worth, he may regain his losses and justly profit by the advantages so lavishly bestowed by such friendly climate and generous soil. He knows, too, that many economies, wholly beyond his reach as an individual, are easily his if he obeys the present universal industrial law, and co-operates; that reasonable and steady profits may be his if he will be true to the law of co-operation which prompts those with common interests to co-operate to achieve them.

He knows that he is despised by many who profit at his cost, that he is derided for attempting business by controlling the sale of his own products—that in his own chief home market the attempt to sell his own products was met by the demand that he should disincorporate and cease to co-operate. A right now admitted for all other members of society denied to the California farmer by an insolent combination of commission merchants! He is yet asleep, but through the dim chambers of his mind flit suggestions of opportunity and power, and his unquiet mutterings give promise of an awakening when he shall stand forth in strong, patient and courageous action, in such method of co-operation as shall enable the orange grower, the raisin grower, the prune, peach and apricot growers, and the fresh fruit men as well, to act as one force to secure every common good, while each organization shall manage its own particular business its own way. To this end let us invoke every energy of California society.

FRUIT PRESERVATION.

The Fruit Growers' Labor Supply.

TO THE EDITOR:—The convention of State fruit growers which was recently held in the city of San Francisco appointed a committee to consider ways and means of bringing in emigrants and of assuring them of continuous employment after they come to the State. The committee as appointed consists of the following well-known gentlemen: Hon. H. P. Stabler of Yuba City; T. H. Ramsey of Red Bluff; Frank Wiggins of Los Angeles; J. F. McIntyre of Ventura; Thomas Jacobs of Visalia; B. E. Hutchinson of Fowler; A. D. Bishop of Orange; G. H. Cutter of Sacramento; B. N. Rowley of San Francisco; G. H. Hecke of Woodland; F. B. McKevitt of Vacaville; W. E. Woolsey of Fulton; L. F. Graham of San Jose; Frank H. Swett of Martinez; Robert Hector of Newcastle, and A. B. Humphrey of Mayhew.

This committee has recently concluded a three days' session in the city of Paso Robles at which a permanent organization was effected, a comprehensive plan of action outlined and an executive committee chosen of which Hon. H. P. Stabler is chairman, T. H. Ramsey, vice-chairman, and B. N. Rowley, secretary. The Bank of California, San Francisco, was made the repository of funds, and San Francisco the general headquarters city.

The executive committee will soon get together and the work which is already largely planned will begin. Sub-committees are to be appointed for each fruit growing and agricultural county in the State and a finance committee will solicit funds to carry on the work. Data are to be collected and published, showing the requirements of each section, and every effort made to help white people to continuous employment. A system will be inaugurated by which a presentation of facts will be brought to the notice of desirable workers in the East, both industrious single men, women and families, with the view of inducing them to come to California. In this way the advantage of the State, and more particularly, those relating to orcharding and general farming will be featured, and the superiority of soils, climate and other conditions will be properly presented.

The work of contemplation is of deep concern to the orchardists and farmers of the entire State. It is not a question of sentiment or opinion of any character. It is a vital and very-much-alive issue which touches the purse and the bank account, and this being the case a willing and hearty co-operation on the part of those interested is asked for and expected. The great power of the press is acknowledged and newspaper editors in each county of the State are requested to take up the matter and strive to arouse an interest on the subject, to the profit of all concerned.

The committee appointed by the State fruit growers has sketched the outlines of the proposed cam-

paign and it will soon be actively at work. The co-operation of those interested is invited. The ground work has been solidly prepared and made ready to receive the structure, and in order that success shall crown the efforts now being put forth, the interest and the assistance of orchardists and farmers are absolutely necessary.

If for any reason whatever—lethargy, unappreciation of the character of the work, or procrastination—this interest is not enlisted, then the responsibility must rest where it belongs—with those who need the service the most, but who could not be induced to help themselves when organized action pointed the way.

SECRETARY.

THE ORNITHOLOGIST.

Destruction of Beneficial Birds.

By W. OTTO EMERSON of Haywards at the California Fruit Growers' Convention of 1902.

How true is the statement of E. Seton-Thompson that "the life of a wild animal always has a tragic end." In all the ages we find that birds have played an important part in the life of man and in the surroundings of the human race. In early Egyptian times birds were held in great veneration and many were set up in their temples and their images adored for the supposed protection it was thought they could give the worshipper. Among the birds most venerated by the Egyptians were the Sacred Ibis and the owl. Among the ancient Romans birds entered largely into the religious life, and the manner of flight or the position of their entrails when slaughtered were interpreted for good or bad by the pagan priests. Even among our native Indian tribes birds have been regarded as being ominous of good or ill.

The civilized man takes a more practical view of bird life and its destruction in farm or orchard must necessarily interest us more and more as our crops—fruit, seeds and vegetables—are attacked by new pests. This is especially noticeable at the present time, when calls are constantly being made on our experts in entomology to look into pests that are breaking out in different parts of the State, and to supply remedies or preventives for the different insect scourges which are continually attacking the leaves, roots or fruit of the producing districts of the land. Experts in ornithology are co-operating with the entomologists in their labor in most of our universities, while the horticultural departments and boards of horticulture are all working hard to the same end—the preservation of our crops from our insect enemies—and in line with this work investi-

gating the benefits derived from the different species of birds from all sections of the country, studying their foods, habits and methods, in farm and orchard, and even in the wilderness.

HOW BIRDS ARE DESTROYED.—The destruction of beneficial birds is moving along in three lines, the elements, wild animals, and the hand of man. This destruction at the hand of man is for three purposes: adornment, food, and scientific investigations, and the destruction is greatest in the order named.

A bird's life at the most does not range over five to fifteen years. Those of the order Anseres raptores and some of the pelagic forms live many years. The causes of destruction by storms or the elements on land or water is not noticeable in the diminishing of great numbers from any section of the country, in comparison with the trap or gun of man. Many are killed by storms and by coming in contact with the light stations of the sea coast, where they are attracted like moths to their death, by the blinding rays of light. Many are also killed by striking against the overhead wires, tall towers and spires of thickly settled cities. They become confused by these unnatural objects in their migrating northward to the summer home or southward to the winter home, and so the destruction by these tall objects and lights amount to many hundreds during the nights of the migrating season. Others are driven far off shore to perish at sea.

Only a few, comparatively, are destroyed by wild animals, as the weasel, coon, fox, wildcat, one or two species of owl and hawk, which prey, in part, upon bird life for their food.

The hunter kills thousands where the elements and animals destroy only tens.

A NEFARIOUS TRAFFIC.—In many States most admirable laws are being framed to stop the market and plume hunters from carrying on the wholesale destruction of bird life. A walk through any of the large markets of any of our large cities will show us the results of the trap nets and guns. Well spread before the eye are hundreds of featherless birds, skewered by dozens on willow switches or sticks at from 30 to 50 cents a dozen, and this shooting and netting of birds is carried on the year round, excepting in the case of the robin and the meadowlark, and those game birds protected by law. A few countries are trying to enforce ordinances for the protection of some song birds.

In examining the birds exposed for sale at the market stalls many beneficial species will be seen—three varieties of goldfinches (spinus), two melospiza, a pipilo, hundreds of pipits (anthus), some of the horned larks (otocoris) shot in large numbers, four varieties of the family turnidæ, besides many species of small shore birds. If we ask the salesman for reed birds, he will give us any of them, as they all go un-

USEFUL BIRDS TO FARM AND ORCHARD.

COMMON NAME.	SCIENTIFIC.	CHARACTER OF FOOD.
Marsh hawk.....	Circus hudsonius.....	Small mammals, insects and reptiles.
Western redtail hawk.....	Buteo borealis calurus.....	Squirrels, field mice and grasshoppers.
Red-bellied hawk.....	Buteo lineatus elegans.....	Squirrels, field mice and grasshoppers.
Swainson's hawk.....	Buteo swainsoni.....	Grasshoppers, crickets and mice.
Rough legged hawk.....	Archibuteo ferrugineus.....	Grasshoppers, crickets and mice.
Pigeon hawk.....	Falco columbarius.....	Crickets, field mice and grasshoppers.
Desert sparrow hawk.....	Falco sparverius deserticolus.....	Crickets, field mice and grasshoppers.
Barn owl.....	Strix pratineola.....	Gophers, rats, mice, shrews and frogs.
Barred owl.....	Syrnium nebulosum.....	Gophers, rats, mice, shrews and frogs.
Short eared owl.....	Also accipitrinus.....	Gophers, rats, mice, shrews and frogs.
Long eared owl.....	Also wilsonianus.....	Small mammals and frogs.
California screech owl.....	Megascops asio bendirei.....	Mice, beetles and grasshoppers.
California pygmy owl.....	G. gnoma californiacum.....	Mice, beetles and grasshoppers.
Burrowing owl.....	S. cucularia hypogaea.....	Mice, crickets, grasshoppers and beetles.
Cabanis' woodpecker.....	Dryobates villosus hyloscopus.....	Wood boring larvae and insects.
Gairdner's woodpecker.....	Dryobates pubescens gairdneri.....	Wood boring larvae and insects.
Nuttall's woodpecker.....	Dryobates nuttalli.....	Wood boring larvae and insects.
California woodpecker.....	M. formicivorus baldri.....	Wood boring larvae and insects.
Red-shafted flicker.....	Colaptes cafer collaris.....	Codlin moth larvae and ants.
Arkansas king bird.....	Tyrannus verticalis.....	Injurious insects of all kinds.
Ash-throated flycatcher.....	Myiarchus cinerascens.....	Noxious insects, moths and larvae.
Say's phoebe.....	Sayornis saya.....	Noxious insects, moths and larvae.
Black phoebe.....	Sayornis nigricans.....	Noxious insects, moths and larvae.
Western wood pewee.....	Contopus richardsoni.....	Noxious insects, moths and larvae.
Western flycatcher.....	Empidonax difficilis.....	Noxious insects, moths and larvae.
Mexican horned lark.....	Otocoris alpestris chrysolæma.....	Insects and seeds of noxious weeds.
Arizona hooded oriole.....	Icterus cucullatus nelsoni.....	Caterpillars, larvae of wire worms.
Bullock's oriole.....	Icterus bullocki.....	Larvae of noxious insects and army worms.
Western meadow lark.....	Sturnella magna neglecta.....	Beetles, grasshoppers, wire worms and crickets.
Arkansas goldfinch.....	Astragalinus psaltria.....	Scale, aphids and noxious seeds.
Western chipping sparrow.....	Spizella socialis arizonæ.....	Ants, spiders, seeds (spring and fall).
Oregon junco.....	Junco hyemalis oregonus.....	Noxious weed seeds (spring and winter), scale.
Samuel's song sparrow.....	Melospiza cinerea samuelis.....	Injurious insects of winter and spring.
California towhee.....	Pipilo fuscus crissalis.....	Weed seeds and larvae of injurious insects.
Black-headed grosbeak.....	Habia melanocephala.....	Larvae of wire worms, corn worms and beetles.
Lazuli bunting.....	Passerina amoena.....	Summer insects and noxious weed seeds.
California shrike.....	L. ludovicianus excubitorides.....	Crickets, grasshoppers and beetles.
Western warbling vireo.....	Vireo gilvus swainsoni.....	Injurious insects and larvae.
Vigor's wren.....	Thryothorus bewickii spiluru.....	Tree spiders and larvae.
Western house wren.....	Troglodytes ædon aztecus.....	Spiders, bugs, caterpillars and larvae.
Plain titmouse.....	Parus inornatus.....	Injurious larvae and tree bugs.
California bush tit.....	Psaltiriparus minimus californicus.....	Scale, bark lice, minute insect eggs.
Russet-backed thrush.....	Hylocichla ustulatus.....	Spiders, beetles and ground insects.
Western robin.....	Merula migratoria propinqua.....	All kinds of earth worms.
Western bluebird.....	Sialia mexicana occidentalis.....	Caterpillars, spiders and grasshoppers.

BIRDS NOT WORTHY OF PROTECTION.

Sharp-skinned hawk.....	Accipiter velox.....	Young poultry, small birds.
Cooper's hawk.....	Accipiter cooperi.....	Game birds, and small, insectivorous birds.
Duck hawk.....	Falco peregrinus anatum.....	Game and insectivorous birds.
Red-breasted woodpecker.....	Sphyrapicus ruber.....	Girdling trees with rings of holes.
California jay.....	Aphelocoma californica.....	Destroys insectivorous bird nests and fruit.
House finch.....	Carpodacus mexicanus frontalis.....	Destroys fruits and blossoms.
English sparrow.....	Passer domesticus.....	Feeds on grain, fruit, buds and blossoms.

der that name, although the reed bird is known on the Atlantic coast as bobolink (*dolichonyx oryzivorus*).

The market hunting grounds are the surrounding bay counties; but many are now found up the river valleys, where they have more liberty in their noxious trade. Along the river banks and brushy sloughs may be seen the mode of taking birds by spreading fishnets over the low bushes, where several hundred birds will be taken at a setting. Two thousand birds is not an unusual day's trapping by this means. Nothing can escape the net. More birds can be destroyed in one day by this means than a man with a gun could get in a week's shooting. It will now be seen how the diminishing of bird life is going on in this one instance.

WHOLESALE MURDER.—The hunting of birds for the millinery trade outnumbers all the other means we have so far mentioned. For this purpose the slaughtering of our feathered tenants goes on regardless of kinds, from a wren to a pelican. All can be made use of, by coloring, for purposes of adornment. From a circular letter which came into my hands last January, I learned of a go-between in Oakland who was connected with a sale of 40,000 birdskins shipped to an Eastern plume house. I was addressed on the subject of a market to be had for wings, breasts and skins generally of eagles, hawks, owls, gulls, terns, grebes, and, in fact, any brightly-colored bird that would do for the trade.

Plume hunters are to be found all along our mountain lake borders as soon as the nesting season begins, collecting what may come to the lake for the reproduction of their kind. When the hunter has cleaned out the vicinity, he moves to another, taking in the whole gamut of lakes from California to Washington. In the everglades of Florida and bayous of Texas outfits of steam launches and sloops are sent to collect the nesting birds. In many sections species have become exterminated where formerly they were bringing up their young by thousands, and these, old and young, would later on have spread all over the continent, doing good by keeping down the countless numbers of noxious insects and small destructive animals.

The great record of one hunter in Florida is a disgrace to any man—killing in a single season 141,000 birds. A few years ago an order was sent to this coast for 10,000 water birds' wings and breasts, which were collected from near-by bay shores, there being more than five men employed for the winter. This destruction of vast numbers of birds must necessarily mean an increase of insect pests, which will

require more vigilant care and a vastly greater expenditure of money on the part of the husbandman in protecting his crops. Wherever we see vegetable life weakened by insects feeding upon it, other ills, such as fungous growths, smut and scale, more readily take hold of the tree or shrub and soon spread disastrous results to the fruits.

NAMES AND FOODS.—The following list of useful birds is described as beneficial. There are many others that could be added that the layman would not be so familiar with as those named. Seven species are named as not worthy of protection: (See preceding page.)

THE VETERINARIAN.

Answers by Dr. C. W. Fisher.

FOR MANGE ON PIGS.

TO THE EDITOR:—Can you give me, through your paper, a remedy for pigs afflicted with mange?—D. A. GILLIAM, Madison.

A remedy for mange in pigs is made up as follows: Crude petroleum, 1 quart; turpentine 1½ ounce; sulphur, enough to make a thin paste. This mixture should be left on for a week if the pigs do not wear it off sooner. Creolin mixed with water in the proportion of a tablespoonful to the pint makes a valuable bath for the mange.

BARLEY BEARDS.

TO THE EDITOR:—I have had considerable experience in hog raising, but something new to me in the way of disease in pigs, if disease it be, has happened. It comes in the way of an abscess under the jaw—sometimes two or three on the same pig. The abscesses seem to be enclosed in a tough bag, from which, when lanced—the pressure is so great—a cream-colored liquid puss spurts, sometimes as far as 10 feet. I feed unthreshed barley, and some say it comes from the beards, but I think not, as it has occurred in pigs not having access to the barley. Please tell me the cause and the remedy.—READER, Palo Alto.

It is very likely that the abscesses under the jaw of pigs are caused by the barley beards. Cases of abscess in pigs that are not fed on unthreshed barley may possibly have been caused by some other foreign body, or by other causes that lead to abscess formation. Under the circumstances the feeding of barley is not desirable. As soon as the swellings show a soft spot they should be freely opened at the best point to ensure free drainage. Healing will be en-

couraged by washing out the cavity daily with creolin mixed with water in the proportion of a tablespoonful to the pint. A hard rubber piston syringe of one ounce capacity is useful for this and similar purposes.

FOR RHEUMATISM.

TO THE EDITOR:—I have a fine mare that has been troubled with rheumatism every winter for three years in the hind legs, the hocks swelling quite badly, sometimes in one and sometimes in both, making her stiff and lame. Is it rheumatism? If so, what is the treatment? She is only troubled in wet weather. Please give directions for treatment through the PACIFIC RURAL PRESS.—D. D. AVERELL, Arcata.

Give one-half ounce of sodium salicylate every two hours for ten hours if relief is not obtained sooner. When relief is obtained give a dose but twice a day for a few days. The affected hock joint may be rubbed with oil of mustard and linseed oil in the proportion of one to fifteen. Instead, hot applications may be made to the joint.

That Game Asset Proposition.

TO THE EDITOR:—I noticed a piece in your issue of November 29, on page 351, entitled "Game as a State Asset," which I think would not be agreed to by many California ranchers. I have ten to fifteen acres of one to two-year-old fruit trees, surrounded by a fence made of 6-foot pickets and 8-foot posts, with barbed wire on top.

The deer jump this and eat all the leaves and twigs off the trees and break what they can't eat. They are also very destructive to corn and vegetables of nearly all kinds. I have often seen them in my orchards and corn fields within 100 yards of the house, although they do most of the damage at night.

I was advised last summer by a game commissioner that I couldn't kill deer out of season, even to protect my own property, but that I had better invite all the hunters possible in here during the open season.

As I own over 3000 acres here, and raise cattle and hogs, the hunters would do me more harm than good in the way of setting out fires and killing stock.

Why should people who have no property or other interests here be allowed to come in and kill game that has been fattened on my fruit trees and on my pasture?

As I feed the deer, why shouldn't I have a right to kill one for my own use when I need it?

There is no butcher shop within 25 miles of here. I

OWN A HOME IN CALIFORNIA.

45,000 Acres

IN THE GREAT SAN JOAQUIN VALLEY

VARIOUSLY ADAPTED TO

Oranges, Alfalfa, Vegetables,
Lemons, Grazing, Melons,
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And, in fact, almost every other product of the soil of California.

One of the Greatest Irrigation Systems in the State.

Particular attention is directed to success being achieved by farmers engaged in dairying, fruit raising, and in the cultivation of sweet potatoes and almonds.

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in Fresno and Kings Counties. 60,000 acres of Kings River bottom land, none better in the State for dairying, corn growing and fruit raising. Now being sold in small lots to suit purchasers at \$35.00 to \$50.00 per acre, including perpetual water right, with abundant water for irrigation.

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NARES & SAUNDERS,

LATON, FRESNO CO., CALIFORNIA.

WHEN WRITING PLEASE MENTION THIS PAPER.

can't kill beef for home use, so if I don't get venison I have to live on salt pork.

If the deer belong to the Government, why shouldn't the Government take care of them and be liable for any damage they do?

The outside hunters who come in always bring hounds, which run off deer that they can't kill, and in many cases kill hogs and sheep, too.

Mira Vista Ranch, Cazadero.

HAMILTON OTIS.

These are hard questions to answer. We are well aware that many game laws are directly adverse to the farmers' interests, and their enactment is secured by the influence of the sportsmen. As this influence largely preponderates, it is difficult to see how changes can be effected. The laws are not designed against farmers, but against murdering pot hunters; but the farmer suffers just the same.

Agricultural Review.

CONTRA COSTA.

PEAT LAND FIRE.—Antioch Ledger. A peat land fire has been raging on Victoria Island, in the eastern end of this county, and 100 men and a dredger are at work fighting the fire.

THE SEWER PIPE WORKS, unused for some time, are for sale.

FRESNO.

REEDLEY CO-OPERATORS.—Reedley Exponent: Last Thursday the Dried Fruit Growers' Association of Reedley was organized, the following growers selected as directors: T. M. Lane, W. H. Carpenter, J. C. McCubbin, E. Archibald and A. L. Wiseman.

THE ST. GEORGE WINERY at Mattermore, destroyed by fire recently, with immense quantities of wine, will be rebuilt somewhat smaller. Loss was \$150,000; partly insured.

ONE COUNTRY PRODUCT.—West Park Correspondence Republican: Nelson Daniels, aged fourteen, without lessons or assistance, drew a picture of a woman in distress for want of work. This he sent to a business college in Scranton, Pa., which awarded him the prize, a free scholarship in the school of drawing by correspondence.

DRAINAGE.—A few days will see the installation of a drainage system for alkali grounds in Central Colony, as the result of the work of Government Expert Heileman.

TO STUDY THE GRAPE.—Percy T. Morgan, president California Wine Association, has written to Geo. C. Huisman, expert on viticulture, Washington, D. C., asking his assistance to secure a Government instructor to vineyardists in California.

POULTRY ASSOCIATION DOINGS.—The election of officers for the Fresno Poultry Association resulted as follows: President, T. B. Key; vice-presidents, R. J. Venn of Fresno, Elias Gallup of Hanford, M. E. Kirby of Madera, and Ben. Woodhull of Stockton; secretary, George R. Andrews; superintendent, J. B. Ure. The date for the next show was set for December 16th to 19th, 1903.

KERN.

EXPERIMENTAL ORCHARD.—The Bakersfield Board of Trade proposes to set out forty acres to oranges as an experiment. The land has been purchased, a company known as the Kern Orange Farm Co. has been incorporated, and shares will be sold.

KINGS.

TULARE LAKE LEVEE.—Hanford Journal: A levee 8 miles in length is soon to be erected as a protection against overflow and inundation by the waters of

Tulare lake, which is about the only natural possible drawback to the cultivation of these lands.

RICE RAISING will be tried this season by J. Clements at Clements.

LAKE.

LAKEPORT APPLES FOR THE SICK.—Lake County Bee: In Lake county apples are rotting on the ground. Now, let's form a partnership for the purpose of giving the San Francisco Fruit and Flower Mission a chance to distribute some of the apples that will otherwise be wasted.

LOS ANGELES.

PASADENA'S SEWER FARM walnut crop was this year worth \$500 net from sixty acres of trees just reaching full bearing age. Alfalfa is also raised, with which the city department horses are supplied and many tons sold; a herd of 100 hogs is being kept, which will be increased, possibly, to 500.

MENDOCINO.

SWEETS.—Beacon: A. L. Gonsalves has demonstrated that good sweet potatoes can be raised at Mendocino City.

MERCED.

BIG STEER.—A 2260-pound steer from the Chowchilla ranch at the State Fair, alive, graced a San Francisco market, dead, this year.

FIG PROSPERITY.—Merced Star: Fig growing is increasing in this county and promises to be an industry of considerable commercial value. In Yosemite Colony there are several fig orchards, comprising sixty acres. Patterson Bros. have twenty acres of four-year old trees from which they gathered this year seven tons. The crop was sold in bulk to one purchaser for 4 cents a pound. Next year the entire crop is to be packed in cartons and sent to British Columbia.

SHEEP RANGE.—Sun: Sheep range is unusually scarce, and the available range commands better prices than for eight years past. Frost has killed the grass to a large extent. Sheep men are paying 25 cents and in one instance 28 cents. One owner went to San Luis Obispo county to look for feed.

DUNKARDS IN MERCED COUNTY.—Twenty from Washington have settled at Legrand.

SACRAMENTO.

AN ELECTRIC RAILWAY from Sacramento to Walnut Grove is seriously proposed.

THE PROPOSITION TO RELIEVE YOLO BASIN by a drainage canal has been for the time abandoned, as no permanent right of way could at present be secured.

CO-OPERATIVE COMPANY TO MARKET.—Sacramento Record-Union: T. W. Johnston, George W. Foulke, George T. Carr and E. W. Springstead of Elk Grove and John L. Scholefield of Florin are the directors of the Elk Grove Wine Grape Growers' Association (co-operative), formed to market their grapes, etc. Office at Elk Grove.

SAN BENITO.

COYOTES KILL CALVES.—Hollister Bee: The John Ashurst ranch alone has lost some forty calves on account of coyotes.

NEW ROAD.—It is proposed to connect San Juan valley with Pajaro valley with a new road, much shorter.

SAN BERNARDINO.

REDLAND-HIGHLAND ORANGE LAND Co. has been organized by E. P. Fay, president of the Fay Fruit Co., F. J. Harrigan and others, with the right to issue \$1,500,000 preferred and \$3,000,000 common stock, "for the purpose of bringing together certain Eastern and Californian interests." This is undoubtedly an outgrowth of the formation of a more extensively capitalized company in New Jersey last summer, to enable Eastern capitalists to acquire orchards, driers, canneries and other fruit interests in California.

FOR OILED ROADS.—The Board of Supervisors of San Bernardino county has apportioned \$20,000 from the present fiscal year's taxes exclusively for the purchase of oil for the county roads during the year.

SAN DIEGO.

IMPERIAL has a farmer's club; W. A. Edgar, president; W. E. Wilsie, secretary.

SAN LUIS OBISPO.

BIG RANCH TRANSFERRED.—J. H. Henry, once in the street railroad business in San Jose, has bought the Chicota ranch of 16,000 acres for \$100,000, it is said, from the Home Savings' Bank of San Francisco.

BEEF PRIZES.—San Luis Obispo Tribune: Oceano sugar beet raisers got the prizes awarded by the Betteravia factory people.

THE ARROYO GRANDE VALLEY is rapidly filling up with a progressive class of

KENDALL'S

160 Eagle Ave., Danvers, Mass., Nov. 18, 1900.
Dear Sirs—I have used your Spavin Cure with great success. I find it a most valuable liniment to have, as I have found it a cure for Cuts, Sprains and Horses' Galls, and as a Spavin Cure it is the most reliable liniment that can be bought.
CALEB TILLEY.



SPAVIN CURE

THE 'OLD RELIABLE'

And Most Successful Remedy Ever Discovered for Spavins, Ringbones, Splints and all Lameness.

This is the unqualified experience of thousands of horsemen and others in this and other countries and there is no reason why you should not share in these benefits. Just read what the above people say about "Kendall's." Write to them for your own satisfaction.

In addition to being the best stable remedy known, it is unequalled as a liniment for household and family use. Sold generally by all druggists. Price \$1; six bottles for \$5. We send valuable book, "A Treatise on the Horse," profusely illustrated, free upon request.

DR. B. J. KENDALL CO.,
Enosburg Falls, Vt.

farmers and they are following the most advanced methods. B. L. Fortney has just harvested a crop of carrots from one acre of ground which sold for more than \$250.

HORSE RAISING.—Templeton Advance: San Luis Obispo county is rapidly forging to the front as a horse-producing section. Saturday a carload of twenty-three head was shipped from this station to Los Angeles. This made thirteen carloads shipped from this county in the past three months.

SAN JOAQUIN.

LIKE BREAD UPON THE WATERS.—Lodi people cast their fruits, in a nice way, upon twenty-seven Iowa tourists in train last October, and now nineteen of them, after touring the State pretty thoroughly, have returned to Lodi to settle.

THE SUPERVISORS have adopted an ordinance to give \$1 to the planter of each tree along the public highway which is alive at the age of five years.

SANTA CLARA.

WILL FIGHT LEGALLY.—The officers of the practically defunct C. C. F. A. will fight the receivership appointed by vote of the membership.

A THIRD RAIL in the S. P. narrow gauge railroad from Los Gatos to Wrights is now assured, says the Los Gatos News.

SANTA CRUZ.

IN PAJARO VALLEY.—Farmers having hill land will sow an unusually large acreage of grain this year. Smith Bros. will devote 100 acres at Stony Ford to black oats. The valley will be quarantined against trees from districts infected with either pear or apple blight.

SOLANO.

FOSTER BROS.' CANNERY FOR DIXON.—Dixon Tribune: The effect of the cannery's coming to town is being felt and property values in Dixon and some rents have been increased at least 25% as a result.

SONOMA.

PROSPERITY.—The Placencia Fruit Co., owned mostly by Petalumans but operating in Orange county, this year declared a dividend of \$11 per share.

TEHAMA.

THE Corning Poultry Association is entering upon its second year with renewed interest.

TULARE.

BIG IRRIGATION SUIT.—Visalia Delta: An action was filed in the Superior Court last week by Chas. J. Lamberson and C. L. Russell as attorneys on behalf of all the people interested in the ditches taking water out of the St. John river against all of the persons interested in ditches taking water out of the Kaweah, St. John or Cross creek, to determine alleged conflict of rights. The case is the largest ever filed in the court and will require six months to try it.

TELEPHONE SAVING.—The People's Company, a local but growing concern, charges but 15 cents for five minutes' talk, and yet it can't get a charter in Porterville.

YOLO.

WOODLAND CREAMERY.—The annual report shows that during the past year receipts for butter and cream were over \$65,000, of which \$57,000 was paid to the patrons. The average price received for butter was a little over 24 cents per pound.

Black Leg is now prevalent and wise stockmen are taking out cheap insurance against it. Early vaccination with reliable vaccine is the cheapest insurance. Read the ad. of The Cutter Analytic Laboratory for further particulars.

GLENN RANCH,

Glenn County, :::: California.

FOR SALE

In Subdivisions.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the western bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Chico, California.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

WIRE FENCE

HOG CATTLE POULTRY NETTING BARB WIRE

WEST COAST WIRE & IRON WORKS

19 FREMONT ST. SAN FRANCISCO.

PAGE

If Page Fence

Isn't really a better fence, then we are mistaken. The material, and the labor on it, cost more, and we candidly believe it is better and lasts longer.

PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

FENCE! STRONGEST MADE

Tight. Sold to the Farmer at Wholesale Prices. Fully Warranted. Catalog Free. COILED SPRING FENCE CO. Box 209, Winchester, Indiana, U. S. A.

HEALD'S

BUSINESS COLLEGE,

24 Post Street, San Francisco, Cal.

The Leading Commercial School West of Chicago. ::::

ESTABLISHED NEARLY 40 YEARS.

30 Teachers; 70 Typewriting Machines; 19,000 Graduates; 1000 annual enrollment; 500 average daily attendance; 600 calls annually for graduates of the college. All departments open the entire year. Both sexes. Individual instruction.

Write for new Catalogue and College Journal—Free.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam

A Safe Speedy and Positive Cure

The Safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. Impossible to produce scar or blemish. Every bottle sold is warranted to give satisfaction. Price \$1.50 per bottle. Sold by druggists, or sent by express, charges p. d., with full directions for its use. Send for descriptive circular.

THE LAWRENCE-WILLIAMS CO., Cleveland O.

THE HOME CIRCLE.

The Land of Sunshine.

Queen of the glorious sisterhood of States,
Fair California, Lily of the West,
How can I pay my tribute in mere words
To her whom God and mortal thrice hath
blest?

Can magic pen describe her valleys fair,
Her blossoms tinted by a Hand divine,
The liquid music of her waterfalls,
Her mountains, snow-crowned, lofty and
sublime?

Dame Nature cradled thee upon her
breast
And strove her secret treasures here to
hide.

The nectar of her breath is in the winds.
Her verdant arms have clothed the foot-
hill's side.

Thy luscious fruits have stole her sunset
hush.

The crimson of her lip is on the rose,
And poppies spill their gold in burnished
haze.

Thro' all our bright and cloudless sum-
mer days.

Here our forefathers watched the rising
sun

Awake the Westland with its morning
kiss;

Nor dreamed they that the tapestry of
years

Would ere disclose such noble soil as this,
Where giant forests lock their mighty
arms

To sentinel our happy birthland's rest,
And Liberty has folded her bright wings
Above the golden ensign of the West.

—Maude Rogers, Goshen, Cal.

A Morning Thought.

What if, some morning, when the stars
were palling,

And the dawn whitened, and the East
was clear,

Strange peace and rest fell on me from
the presence

Of a benign spirit standing near:

And I should tell him, as he stood he-
side me:

"This is our Earth—most friendly and
fair;

Dally its sea and shore through sun and
shadow

Faithful it turns, robed in its azure air;

"There is hest living here, loving and
serving,

And quest of truth, and serene friend-
ships dear.

But stay not, Spirit! Earth has one de-
stroyer—

His name is Death; flee, lest he find thee
here!"

And what if, then, while the still morning
hightened

And freshened in the elm the Sum-
mer's breath,

Should gravely smile on me the gentle
angel

And take my hand and say, "My name
is Death!"

—Edward Rowland Hill.

Princess Pine.

Hail! thou lovely Princess Pine,
Lady of remover line
Than the chronclerls of eld
Ever in their charts beheld.

Here for centuries untold
Hast thou queened it in the wold,
Spreading out thine emerald gown
O'er the sply needles brown.

When the partridge beats his drum,
Here thy subject wood-folk come;
Here in council and in sport
Meets thine ancient sylvan court.

Dainty sovereign of the wild,
Half an empress, half a child,
What a long, sweet tenure thine
Of the royal house of Pine!

Ever under fragrant shade,
On the hill and in the glade,
Where the broad houghs glint with sun,
May'st thou reign, thou pretty one!

—James Buckham.

The Vanished Ages.

"Mourn not for the vanished ages,
With the great heroic men
Who dwell in history's pages
And live in the poet's pen;
For the grandest times are before us,
And the world is yet to see
The noblest worth of this old world
In the men that are to be."

—Anon.

The Teaching of the Gospel.

If Jesus came for anything, it was to
bring a light into the world whereby
men could better see the best relations
between themselves and between them-
selves and all things. Men have got-
ten many false ideas of Him and His
gospel by listening to what other men
say of them, instead of reading of them
in the Book itself. The gospel is one
that has never been equalled since, for
its common sense, its simplicity, its
comprehensiveness. It is designed not
for perfect men and women to keep
them perfect, but for imperfect men
and women to enable them to become
perfect. It is a gospel of growth,
civilly as well as personally, toward
perfection here on earth. And just as
worthy of credence or of being followed
practically, just as sure in the produc-
tion of the results specified of it, as the
gospel of Edison about creating and
setting up an electric light plant.

Some years ago a young medical
student, filled with the disbelief of the
age, concluded to take up the reading
of the gospel, partly to vary the monoton-
y of reading, to rest the mind. The
idea came to him in this way: It oc-
curred to him one day, whether one
believes it or not and whatever one may
think of it Christianity is a great page
in the book of the world's history. It
grows out of and depends, wholly, upon
the sayings of one Jesus. Without
them it would not exist. What, then,
did He really say? "I know what the
church says He said but did He say so?"
he said to himself. "The church tells
me that if I don't believe that He said
what it says He said I will be damned
eternally, but still it does not seem to
me that He said them. It is, therefore,
a serious matter to know what He said.
How shall I find out? There is but one
way, and that is to read what He said."
Thus he reasoned. So he read. Taking
one after another of the great subjects
on which the church says He spoke, the
young man patiently, day after day,
in spare hours, plodded through
the four gospels, which are the only
places on earth where the words of
Jesus are originally recorded, marking
each passage bearing on the subject,
and getting together at last all the
sayings on each. And he found that the
gospel was simple, concrete and con-
structive, and to his mind perfectly
practical, the quintessence of common
sense. It made no such claims for Jesus
as have been made for Him. Moreover,
it was worthy of all credence, by all
men, as a practical rule of life. It was
not, as popularly supposed, a gospel of
asceticism, of righteousness and pov-
erty; but it was a gospel of righteousness
and riches; riches as the inevitable re-
sult of righteousness; riches of every
kind, and for all, civilly and personally.

So the concreteness and harmony of
a moving faith came out of the confusion
of disbelief to one, and it may to others,
simply by the reading of the words of
Jesus as they are in the Book and the
getting together of all He said on each
subject that interests us, and on any
subject that is of interest in the world.

Lloyd Saw the Toad Pull His Skin Over
His Head.

Lloyd was fond of all the creation
that lived in the garden, from the rob-
ins high up in the apple tree to the
little ants which built their homes in
the gravel walks. He was always
careful not to hurt any of them, but he
thought some of them more interesting
than others. There was a toad which
he called his, and he fed it with crumbs
every day. He liked to watch it as it
hopped about among the plants,
darting out its bright red tongue to
catch any small insects which came in
its way.

One day Lloyd ran to his mother in
great excitement.

"My toad is trying to get his skin
off!" he cried.

It was true; and when Lloyd and his
mother reached the toad they saw him
pulling his skin over his head in much
the way that a little girl would take off
her high-necked, long-sleeved apron,
only it was harder work for him to do.
But he tugged away with his forefeet

until he was free, and then what a
bright, new coat he displayed!

Lloyd was delighted, and he asked
many questions about toads and the
way in which they changed their coats,
and after that he was more fond of his
toad than ever.—Emma C. Dowd, in
Our Little Ones.

The Guild of Courtesy.

An organization known as the Chil-
dren's National Guild of Courtesy has
been thriving and growing in England
for ten years. In 1901 it had nearly
32,000 members scattered through
some 500 towns and villages. Its pro-
fessed aim is "to encourage a spirit of
chivalry among children; to stimulate
them to be courteous; and to promote
habits of neatness and cleanliness, and
purity of action and speech."

A boy or girl, between the ages of
five and fifteen, becomes a member by
paying 1 penny, the amount of the an-
nual subscription. A bronze badge of
membership costs 1 penny more.

The branches are organized in the
simplest manner—usually in public and
Sunday schools. Once a week the rules
of the guild are read aloud. They are
arranged under various headings—
courtesy, as regards yourself, courtesy
at home, at school, at play, in the
street, at table, everywhere. Taken
together, these rules provide for the
foundations of good manners—to which
good morals are first cousin.

Reports from many parts of England
tell of the noteworthy effect which this
concerted action on behalf of courtesy
has wrought in the life of school and
town. If it is needed in a country
where the 'bus conductor says "Thank
you, sir," when you pay your fare, is
there not room for a similar movement
in our less deliberate land?

To incite the members to follow their
rules of courtesy, the guild declares:
"Three of the bravest and greatest
men who ever lived, the Duke of Wel-
lington, General Gordon and General
Washington—were distinguished for
their courteous behavior." It is sig-
nificant to find the father of our coun-
try singled out as one of three models
for English youth. From this striking
fact American boys and girls—and
their elders—may be left to draw the
full suggestion and stimulus.—Youth's
Companion.

A Matter of Reading.

How to read and get full value for
the time thus spent, the greatest
amount of profit and pleasure, is often
a matter of circumstance. However,
there is little question but that system-
atic reading is practiced altogether too
little. Haphazard reading is unfortu-
nate. It is more than that—it is a
pernicious habit. By that we mean that
it does actual harm. Perhaps it is not
serious, but it is real in that it unfits
the mind for thorough appreciation of
the best in literature.

Announcement is now made of a read-
ing course for farmers' wives on sub-
jects of interest in home life. The sixth
of the series of lessons is on practical
housekeeping. It suggests that all
housework is worth doing well, and
that to conserve time and strength one
must study the best methods of doing
everyday work of the home. Sugges-
tions are made for kitchen conveniences,
the best way to clean, to wash dishes,
to make beds, etc.

A Cabin Christmas.

Outside my cabin door de worl'
Is cole an' wintry white;
Inside de door, my worl' is warm,
An' sweet wid Christmas light;
Outside my door de worl' is hlg
An' lonesome—'way fum you;
Inside, its heaven's horderland
Wild you an' 'possum stew!

Den keep a-pilin' on de logs
An' sen de hlazes higher,
Till all the cabin walls grow red
Wid blood of Christmas fire;
While some one takes de banjo down
An' softly plays a har
To start de hymn dat tells about
De shepherds an' de star!

—Howard Weeden.

When Marjory Makes the Tea.

Quaint and charming and good to see
Is Marjory when she makes the tea;
Dainty fingers and slender wrist,
Glossy hair by the firelight kissed,
Pensive mouth and serious eyes,
And a smile that comes as a glad sur-
prise.

Bending over the kettle bright,
Watching the flame of greenish light,
This modern witch with her magic art
Weaves many a spell 'round my luckless
heart!

And if that night sleep flies from me,
It will not be because of the tea.

—Grace L. Phillips.

The Winter World.

California has been having a touch of
winter—real winter, such as the East
knows—a distant touch, it is true, but
just enough, perhaps, to make Californ-
ians who never were anywhere else, as
well as those who were, appreciate the
beauties of an Eastern winter as pic-
tured here.

Nothing could be more erroneous
than this mistaken idea that desolation
possesses the earth for the enduring of
a northern winter, says Country Life in
America. Cope and field are not bar-
ren of animal life, as popularly sup-
posed. On the contrary, a host of
friends in fur and feathers will be met
by one who invades their domain. And
they are the easier to study now for
the exposure of their hidden retreats.
Sir Reynard is to be met with almost
any morning. Br'er Rabbit and Puss
are easily traced to their forms and
their acquaintance made. Along open
brooks one sometimes meets that warm-
coated but shy fellow, the mink. On the
meadows mice make little runways un-
der the snow, watched by the rough-
legged hawk, the wariest of his tribe.
Of the birds there are many—social
chickadees, quiet, industrious brown
creatures, noisy bluejays, Corvus the
crow, cheerful and confiding tree spar-
rows from the north, snow buntings
and goldfinches banded together in
community of interests where the grass
seeds are most plentiful, hairy and
downy woodpeckers policing the or-
chard trees, sober-hued juncos, golden-
crowned kinglets in which the spark of
life but burns the stronger as the cold
strengthens, grouse and quail—our two
noblest game birds—the two crossbills,
the redpoll, the pine siskin, the herring
gull—any or all of these and others, all
in sober plumage, one is likely to meet
in a winter ramble, to give the lie to
those who cry "The birds have flown."
And even friends of June you may
chance upon in warm sheltered swamps,
a few hardy robins, waxwings, black-
birds and bluebirds. Nor are the beasts
and the birds all that the keen ob-
server will find for his delight. Seem-
ingly gone is the insect world, yet, like
the trees, these winged creatures of
softer days do but sleep. On bush and
tree twig and on stout weedstalks, un-
der rough bits of bark, fastened to post
and rail of old fences and under the
eaves of buildings are quaint and
curiously woven cradles to be collected
now for what they will bring forth
when spring kisses the land and sets
free all bonds. You who have eyes to
see, go forth even in the winter, for
verily your reward will be great.

And much of all this is true, even in
California.

Physical Culture a Panacea.

Physical culture, as it is scientifically
taught, has proven a panacea for most
of the ills of man and womankind. Fol-
lowers of its teachings are healthy, ro-
bust examples of the benefit derived
from a few moments of otherwise idle
time spent each day under proper in-
struction. Strange as it may be to the
too thin or the too fat, physical culture
will surely add weight to the thin and re-
duce the other, not only without in-
jurious effect, but with a positive ben-
efit to the system, because scien-
tific physical culture brings about nor-
mal conditions. Most ills that human-
kind suffers from are caused by a tem-
porary stoppage of a portion of the
human mechanism.

The Good Old Girls.

There are no girls like the good old girls—

Against the world I'd stake 'em!
As buxom and smart and clean of heart
As the Lord knew how to make 'em!
They were rich in spirit and common sense,
And pity all supportin';
They could bake and brew, and had
taught school, too,
And they made the likeliest courtin'.
—Eugene Field.

Pieces de Resistance for Holiday Dinners.

ROASTED VENISON.—Wash the surface with lukewarm vinegar and water (it should have hung at least a week in a cool place) and rub with butter to soften it. Cover with greased paper tied on; over this a paste of flour and water, rolled out at least $\frac{1}{4}$ inch thick, may be spread, and the whole covered with another greased paper, fastened securely. Fifteen minutes to the pound is the rule followed where it is preferred rare. More time is required to have it well done. Pour a pint of boiling water around the meat, and cover it with another dripping pan. The oven should be hot. After the first hour baste thoroughly at short intervals, recovering the pan after each time. Half an hour before dinner uncover the pan, remove the papers and paste, return to the oven and baste with melted butter and a little lemon juice; dredge flour over the whole and let it brown. Repeat the basting with butter two or three times during the half hour, and take up on a heated dish. The plates should be heated also, as venison cools easily. The neck or shoulder may be roasted without paper or paste. Serve with current jelly and the following sauce:

Jelly sauce for venison:—Strain the gravy into a pan—there should be at least one pint. Thicken with one tablespoonful of browned flour; add two tablespoonfuls of currant jelly, one tablespoonful of lemon juice if convenient, one-half tablespoonful of salt, one-quarter tablespoonful of pepper.

ROAST WILD DUCK.—Parboil with an onion in each to remove the fishy flavor. Use a carrot unless there is to be an onion in the dressing. Stuff with any of the dressings used for tame ducks, and roast until tender, basting at first with melted butter and then with the gravy in the pan. Weaken the pan gravy with boiling water, thicken with browned flour, and stir in one tablespoonful of currant jelly. Serve separately.

PIGEONS OR DOVES ROASTED.—Dress and stuff with breadcrumbs seasoned with butter, salt and a little mace, adding three oysters to each bird; sew up and baste frequently with melted butter; roast one-half hour carefully. Some prefer the apple stuffing. Pigeons to be roasted should be tender. Lay them on the dish in a row.

OYSTERS WITH CELERY.—Put one pint of strong clear beef soup stock in a large stewpan. Instead of milk use sweet cream. Of this cream use one pint to the broth in the stewpan, also four tablespoonfuls of the best table butter, one tablespoonful of salt, one of white pepper, one of ground mace and one of celery extract. If celery can be had in the stalk, use instead of the extract, chopped fine. No more delicate or healthful flavor can be added to any soup, stew, or broth than this. While this is cooking, dredge in finely-powdered cracker dust and a little thickened to your taste. Have ready in a hot tureen fifty of the best oysters parboiled in their own juice. Pour over these the sauce compounded as above and serve immediately.

Washing Red Flannel.

To wash red flannel, mix a handful of flour in a quart of cold water, and boil ten minutes. To this add some warm suds, and wash the flannel gently, rinsing rather than rubbing. Now rinse it

By Bribing the Nerves with opium you may stop a cold but the inflammation goes from bad to worse. Allen's Lung Balsam, containing no opium, goes to the root of the trouble and cures deep-seated affections of throat and lungs.

in two or three warm waters, and the brightest scarlet will never lose its color. Castile or ivory soap only should be used.

The Country School for Housekeeping.

It costs about \$500 to fit up a laboratory (kitchen) for a class of fifteen, though a great deal more can, and perhaps ought, to be spent on it. However, \$500 will do, if more cannot be afforded. The materials consumed in giving the lessons will average four to five cents per lesson per pupil and the cooks and their friends generally devour what they cook, so that there is nothing to sell.

To adapt this system of instruction to our high schools it might have to begin with the sub-junior year, allowing one lesson per week in the laboratory with a lecture in addition.

The work that girls do in Sloyd will be a help to them in this regard. In fact, it will be almost a continuation of the Sloyd with foods instead of boards for raw materials. It teaches them exactness, deftness and observation, and when they come to have families, their families will not be sallow and irritable dyspeptics.

How to Clean Pictures and Frames.

Half a raw potato is a ready and efficient means of cleaning an oil painting. Gently rub the tuber over the surface of the picture until the dirt has been thoroughly loosened and afterwards wipe away with a sponge and clean water. Gilt frames may be renovated in the manner described with the following preparation: Into half a pint of rain water (previously boiled) dissolve as much soft soap as will cover a penny. Add a wineglassful of spirits of hartshorn, and mix thoroughly by frequent shakings. Apply with a soft brush upon every portion of gilt, allow to remain for a minute or two and then wash off with plenty of perfectly clean water. Do not wipe dry, but simply prevent dust settling on the frames.

To Brighten Glass Dishes.

Glass dishes, either "real" cut glass or the pretty imitations which cost so little, often become dull and lusterless, in spite of careful washings. Cut glass, after constant usage, is often repolished, but it is quite possible to give brilliancy to these articles by cleansing them properly. First wash them carefully in warm suds, with a cloth, following this with a little brush which will go deep into the depressions. When dipping the glass into the suds, do not plump it in carelessly, thus inviting cracking, but slide it in sideways. When the dish is washed, put into a box of fine sawdust, kept for the purpose. When

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chimney makes
or unmakes a
lamp.

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dry, shake out the sawdust, and polish with a fine cloth or chamois. The brilliancy thus gained is astonishing.

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has never been appreciated as it is at the present time. This being a fact, it would be poor business policy for me to make you the following offer, unless I had absolute confidence in your honesty as well as my own.

Medical statistics prove that at least 90 per cent of the American people are afflicted with some faulty action of the secretory glands of the liver, stomach or intestines. A congested liver causes biliousness, headache, constipation, sallow skin and many other ailments. My Health Tablets open the bile ducts, forcing the bile into the bowels, thus making nature perform its own work. They are entirely different from anything you have ever used. Pills and all other cathartics leave the bowels weak and worse after taking them than before. You know this. If you always had handy a little vial of my Health Tablets and would use them on the first indication of pain, headache, constipation or sickness of any kind, how much suffering you might avoid. If you are well they will keep you so—if you are sick they will enable you to get well. So positive am I that my Health Tablets will, give you health, strength and new life, that I will send you a twenty-five cent bottle absolutely free until you have had time to test their curative qualities. I know that they will do you so much good you will be thankful to me and will gladly send me the price and recommend them to your friends. Don't be sick and dumpy any longer, but write to me to-day and you will receive a box of Baldwin's Health Tablets to-morrow, by mail, prepaid.

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For the half year ending with December 31, 1902, a dividend has been declared at the rate of three and one-eighth (3 $\frac{1}{8}$) per cent per annum on all deposits, free of taxes, payable on and after Friday, January 2, 1903.

GEORGE TOURNY, Secretary.

Dividend Notice.

San Francisco Savings Union,

532 CALIFORNIA STREET, Corner of Webb.

For the half year ending with the 31st of December, 1902, a dividend has been declared at the rate per annum of three and forty-two one-hundredths (3 $\frac{42}{100}$) per cent on Term Deposits, and three (3) per cent on Ordinary Deposits, free of taxes, payable on and after Friday, January 2, 1903.

LOVELL WHITE, Cashier.

Dividend Notice.

CALIFORNIA SAFE DEPOSIT AND TRUST COMPANY,

CORNER CALIFORNIA AND MONTGOMERY STS.

For the six months ending December 31, 1902, dividends have been declared on deposits in the savings department of this Company, as follows: On Term Deposits at the rate of 3-6-10 per cent per annum, and on Ordinary Deposits at the rate of 3 per cent per annum, free of taxes, and payable on and after Friday, January 2, 1903. Dividends uncalled for are added to the principal after January 1, 1903. J. DALZELL BROWN, Manager

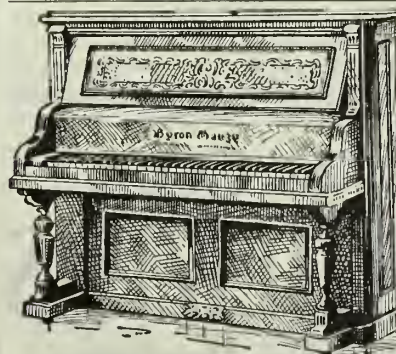


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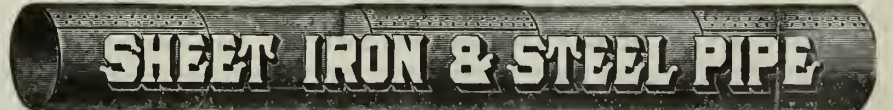
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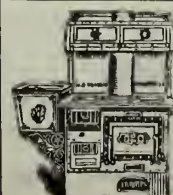


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AGENTS WANTED. WM. G. WILLARD, Dept. 114, 619-21 N. 4th Street, ST. LOUIS, MO.

THE SUGAR BEET.

Some Sugar Factory Outputs.

At Chino, this year, the total weight of beets sliced was 85,957 tons; sugar output, 20,500,000 pounds. At times the factory turned out 33% more product than its theoretical capacity. The factory operated 121 days. Very few serious breakages of machinery occurred. The basis price was \$4.25 per ton of 15% beets, one-half the freight paid from outside points. It was proposed to not pay any freight next year, which created a protest from Compton raisers, but it is likely was adhered to, as the Champion of several weeks ago reports that "Mr. Schroeder says he has practical assurances of a sufficient acreage for the factory next year. Besides the territory about Chino, Anaheim, Compton, Florence, etc., about 3000 acres on the Las Posas ranch, now held by the American Beet Sugar Company, will be available for this factory."

At Oxnard the beet tonnage sliced was over 178,000; sugar output over 600,000 bags. The company figured on contracting at least 20,000 acres for the coming season, and of commencing operations at the factory early in June.

At Spreckels, in the Salinas valley, about 180,000 tons of beets were sliced, and over 40,000 tons of sugar turned out. Flooding land for the new crop began some time ago. The Pajaro valley part of the supply of beets amounted to some 60,000 tons. The price per ton for 1903 is the same, \$4.50, but the company will no longer pay the 50 cents per ton freight, Watsonville to Spreckels.

Lompoc Record: M. F. Drum, in the employ of the Union Sugar Company in the Santa Maria valley, says the company is prepared, with four large pumping plants or systems, to irrigate from 8000 to 10,000 acres. Notwithstanding the cost of furnishing the water to farmers equals about \$4 per acre, the enhanced product from four to twenty tons per acre abundantly justifies the buying of the water by the farmers, who realize from \$80 to \$100 per acre in the gross, while without water they scarce realize cost of production. Irrigation has revolutionized agriculture in the Santa Maria valley, even at a cost of \$4 per acre.

There's Many a Slip on icy roads and sidewalks in the winter. Sprains and bruises follow. That is the time when Perry Davis' Painkiller vindicates its right to the confidence it has retained for sixty years.

PART of Santa Anita ranch has been sold by E. J. ("Lucky") Baldwin to a syndicate for \$500,000.

Healed in Two Weeks.

Trimbell, Wis., May 10, 1902.
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PRINTING—We can do stock and do printing 40 cts., 500 \$1.25, 1000 \$1.75. Bill heads, note heads, cards, vgs, etc., at same price. Samples of work free. **Pacific Commercial Co., 325 Davis St., San Francisco, Cal.**

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DE KOL OF VALLEY MEAD. 7 day A. R. O. record 19 lbs. 9 oz. butter.

ROMEO AAGGIE ACME. 7 day A. R. O. record 26 lbs. 11 oz. butter.

PARTIES WANTING FIRST-CLASS YOUNG BULLS will do well to write us. Prices reasonable, breeding and quality considered. Our herd contains more advanced registry cows than all other herds on the Pacific coast combined. The foundation animals have been very carefully selected from the very best in the United States, regardless of cost. The following are our advanced registry records to date:

Name.	Lbs. of milk in 7 days.	Age.	Lbs. and oz. butter yield in 7 days.	Name.	Lbs. of milk in 7 days.	Age.	Lbs. and oz. butter yield in 7 days.
Fidessa	570	4 yr.	25.	Aaggie Martin	416	6 yr.	16 12 oz.
Matty Clay's Aaggie 2d	499	7 "	23.15 oz.	Minnewawa Salambo, 3 teats	403	4 "	16.1 "
Ruda 2d Belle	401	7 "	20.9 "	Mountain Juliet	382	7 "	15.9 "
Minnewawa Lily	364	4 "	21.4 "	Lady Kurts Alpa	378	6 "	15.3 "
De Kol of Valley Mead	435	3 "	19.9 "	Corona Acturas	344	2 "	14.1 "
Wynetta Princess	391	2 "	18.7 "	Segriss Pieterje De Kol 2d	355	2 "	12 11 "
Minnewawa Louise	474	3 "	18.5 "	Western Princess	294	3 "	12 11 "
Druska	399	5 "	18.4 "	Painted Lady	327	3 "	12 10 "
Olympia Clay	536	6 "	18.2 "	Mary Ann De Kol	391	3 "	12 10 "
De Natsey Baker	377	2 "	17.7 "	Miranda Acturas	325	3 "	12.3 "
Western Duchess	337	7 "	16.6 "	Hengerveld Lass	306	2 "	12.2 "
				Wild West De Kol	279	2 "	10.19 "

WE ALSO HAVE PRIZE WINNING BERKSHIRES. YOUNG STOCK FOR SALE.

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POINTER. Don't pay more for vaccine of uncertain age than we charge for a superior vaccine of known freshness. Refuse to accept any not dated or that is dated more than six months ahead of the date of your purchase.

NOTE OUR PRICES — THEY ARE LOWER THAN ALL OTHERS.

SINGLE, per package, containing ten or more doses, according to age of animals..... \$1 25

DOUBLE, per double package, containing ten to twenty doses, according to age of animals..... 1 75

STRINGS, per package of 10 doses, including needle..... 1 25

Per package of 15 doses, including needle..... 1 75

Per package of 25 doses, including needle..... 2 50

Per package of 50 doses, including needle..... 4 75

VACCINATING OUTFIT, complete, including syringe, for using single and double vaccine..... 4 00

TERMS—Cash with orders or we will send by express, C. O. D. We prepay all charges. Special discount to users of 500 or more doses.

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Pasteur Blackleg Vaccine ready for use. **EACH DOSE SEPARATE.**

Single Blacklegine (for common stock): 10 dose box, \$1.50; 20 dose box, \$2.50; 50 dose box, \$6.00. Double Blacklegine (for choice stock) \$2.00 for 10 doses, first lymph and second lymph inclusive. Blacklegine Outfit for applying Blacklegine, 50 cents.

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of having the best large herd of swine in the State. We won 22 ribbons at the State Fair, which is the largest number in our history; and best of all, we were awarded a **SPECIAL GOLD MEDAL** for excellence of exhibit, the first one ever awarded to a swine exhibit. We have more first-class animals in our herd than ever before and the young stock now ready to ship are fine specimens. We cull our pigs closely and will send out only those we think will prove good breeders and be a credit to any herd. Write for what you want and we will name prices.

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PATENTS. We attend to all business connected with U. S. and Foreign Patents, Caveats, Designs, Trade-Marks, Copyrights and Labels; prepare Assignments, Licenses and Agreements, and furnish opinions as to Patentability, Infringement, etc. **DEWEY, STRONG & CO.** (Incorporated, 1860), 330 Market St., S. F., Cal., and 918 F St., Washington, D. C.

The Short Course at the University.

To THE EDITOR:—The students in the short course in horticulture now closing at the University of California are loud in their expression of thanks to those who have been instrumental in establishing this course, and to the professors who have so ably conducted the same.

This is a course to which public attention should be more generally called. Although the work only lasts ten weeks, a great amount of practical knowledge is gained by the student along the lines of orchard and nursery work, at which he learns to look into the most approved scientific manner.

The work in the lecture room is carried on by able professors, and in the laboratory experts supervise the practical work done by the students themselves. The scope of the work is extensive, covering all the subjects of special interest to California farming. As is natural, orchard and vineyard culture holds a prominent place, as does also the destruction of insect pests. The new industry of beet sugar production is among those attracting much attention. Veterinary science, breeds of cattle, soils and fertilizers are also ably treated.

From the first the work was taken up without loss of time, and the student acquired much valuable knowledge for the time consumed. This being the first attempt of the University to establish a short course the attendance was not large, but has been profitable to those taking advantage of it. With the continuance of these courses the number will increase, for by greater advertising and words of praise given by those attending on their return home public attention will be attracted thereto.

The following action was taken at a meeting of the students in this course:

Whereas, The University of California in establishing a short course in agriculture and horticulture has given to progressive farmers an opportunity to learn the most scientific manner of carrying on the work of the orchard and farm, during the period of the year when all can attend without inconvenience; and

Whereas, This course should receive greater support, covering, as it does, all the subjects of special interest to California farming, among which the cultivation of orchards and vineyards is prominent; and

Whereas, We appreciate the able work of our instructors in the class room and laboratory, who have so conducted the class that a large amount of practical knowledge has been gained in our limited time, therefore be it

Resolved, That we, the students in the short course in agriculture and horticulture, appreciating the work of the University authorities in establishing this short course, and feeling that it is a source of benefit to the State at large, express our thanks for what has been done, and recommend a continuance of the plan, with greater publicity; and be it further

Resolved, That we extend to our professors our deep regard for the work they have done in our behalf.

Done by order of the class.
J. L. Leak (Chairman), John Cill, T. S. Hudson, Committee.

Berkeley, Dec. 17. ATTENDANT.

IN A MODEST SECTION.—Dos Palos Star: The Geneva ranch, situated in the Dos Palos Colony, near Center avenue, and owned by A. McPherson, consists of ten acres of land—about three acres in fruit and the rest in garden and alfalfa. From Dec. 1, 1901, to Dec. 1, 1902, Mr. McPherson, conducting his place alone, sold: Twelve hogs, \$134.50; two calves, \$18; chickens, \$13.50; dried fruit, \$35.60; green fruit, \$87.90; milk from five cows, \$255.15; eggs, \$45.55; total, \$590.20. Dried prunes on hand, 1½ ton. The fruit and feed for five cows, two horses and three calves were raised on the ten acres. When Mr. McPherson, who is a crippled soldier, with practically but one arm to work with, bought the place, he did not make the first payment, and went in debt for a team to work with; but, with perseverance and hard work, he has paid for it all.

No. 1016 Sixth St., Washington, D. C., Nov. 20, 1902.
Dr. B. J. Kendall Co., Enosburg Falls, Vt.
Gentlemen:—Please send me a copy of your "Treatise on the Horse and His Diseases." We have used your Kendall's Spavin Cure for ten years and gladly testify to its merits.
Yours truly, JUSTUS O. NELSON.

New Patents.


DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING DECEMBER 9, 1902.

715,234.—OIL BURNER—G. W. Arper, Oakland, Cal.
715,531.—DISPENSING LIQUORS—S. H. Atchison, S. F.
715,535.—VINE CUTTER—J. M. Barnes, Fresno, Cal.
715,635.—HARNESS—Beldleman & Cameron, Union, Or.
715,634.—SPLIT PULLEY—J. W. Berry, Tacoma, Wash.
715,548.—BURNER—H. B. Cary, Los Angeles, Cal.
715,549.—OIL BURNER—H. B. Cary, Los Angeles, Cal.
715,550.—TRY SQUARE—H. B. Cary, Los Angeles, Cal.
715,638.—OIL BURNER—H. B. Cary, Los Angeles, Cal.
715,731.—WINDOW LOCK—T. Chope, S. F.
715,471.—CONVEYING APPARATUS—F. R. French, S. F.
715,373.—DOOR HANGER—J. Handschmacher, S. F.
715,480.—MOTOR—J. G. Hudspeth, Berkeley, Cal.
715,397.—CAN SEALING DEVICE—A. W. Livingston, Alameda, Cal.
715,414.—ROPE TRAMWAY—A. Painter, S. F.
715,419.—INK ERASER, ETC.—H. Pease, Portland, Or.
715,289.—GATES—G. W. Peck, Greenview, Cal.
715,589.—SHOELACE—E. L. Pitts, Jerome, Ariz.
715,294.—WINDOW SHADE—M. E. Reilly, Everett, Wash.
715,694.—RAKE—W. S. Richards, Albany, Or.
715,319.—STEAM BOILER—Thomas & Stetson, S. F.
715,320.—PLOW—I. L. Umstead, Camarillo, Cal.
715,441.—FLUID PUMP—W. C. Vandergrift, S. F.
715,324.—CAN TESTING MACHINE—Wachhorst & Ross, S. F.
715,326.—PLANE CHUCK—S. E. Walling, New Whatcom, Wash.
715,718.—HOP DRIER—D. Wieting, Meridian, Or.
715,722.—ROTARY ENGINE—F. E. Womer, Fairhaven, Wash.
715,328.—CONCENTRATOR—G. E. Woodbury, S. F.
715,730.—THEATER APPLIANCE—A. M. Zinn, Spokane, Wash.

AROUND MIDDLETOWN.—Bee: C. S. Piner has several boxes of ripe oranges from a few seedling trees that were planted on his ranch between Middletown and Great Western several years ago. They are doing so well that he has planted some Navel trees and intends to set out a large number as soon as the ground can be prepared. He is also planting olives on ground that is a little more exposed, and red apples on the land that lies in the frost belt. H. P. Livermore of San Francisco has twelve walnut trees near Middletown from which he this year sold nuts to the value of more than \$100. Granville Libby, near Middletown, has nut trees just beginning to bear and this year he put up quite a quantity of olives and made considerable oil. An acre of olives on the Pentecost place this year produced over 100 gallons of oil, besides a large lot of pickles, and the oil sold readily at \$3.50 to \$4 a gallon.

A SEED SECTION.—Arroyo Grande Herald: Mrs. M. F. Gibson sold her ranch in the valley to Mr. Bodger, a well-known seed grower of Santa Paula, Ventura county, for \$8000. Mr. Bodger will plant there flower seeds exclusively, of varieties which he knows come to greater perfection and produce larger yields here than on his more southern farm. Seed growers already established here are branching out more extensively each season and growers from other sections, not only of this State, but of other States, are investing here.



Nitrate of Soda

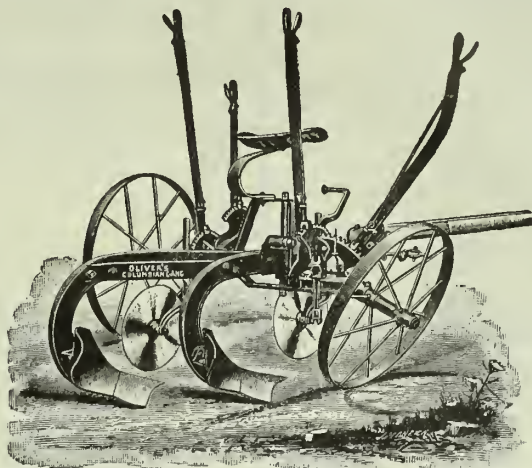
is to plants—whether Fruit, Grass, Grain or Roots—what Oats or Corn is to the horse. No other plant food is so essential to plant growth and crop yield.

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SIMPLE, STRONG AND DURABLE.

The Columbian has all the valuable features of the popular Casaday, but is stronger and simpler in construction. Light in draft and easy to manage.

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Fitted with Chilled or Steel Bases, or with Oliver's No. 40 Gang Bases if desired.

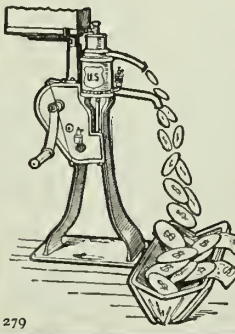
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The U. S. Gets More Cream than others, which means more money to the user;
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If you are thinking of buying a Cream Separator don't fail to write us for catalogue. We will mail free a valuable treatise on "Good Butter Making," also copy of our complete price list of Dairy and Creamery Apparatus and Supplies—the most complete line on the coast.

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Manufacturers of **GUNPOWDER.**
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ASK YOUR DEALER FOR CARTRIDGES LOADED WITH DUPONT.
C. A. HAIGHT, Agent, 226 Market St., San Francisco.

DEWEY, STRONG & CO., Patent Solicitors, 330 Market St., San Francisco, Cal.

The Markets.

General Market Conditions.

WHEAT.—Bradstreet's latest issue says that the visible stock of wheat in the world Dec. 1, this year, was 154,000,000 bushels. This is the smallest amount for seven years, except in 1898, when it was 106,000,000, and 1897, when it was 127,000,000 of bushels at the same date. Local reports from Madera (special), Stockton, Dixon and San Luis Obispo all tell of a scarcity of wheat at those places.

At Chicago, futures on wheat, during the time covered by this report (ending Dec. 23) close at the same figures as they began at. So, also, does May corn, with January corn 1c and December 7c lower; oats 1c higher for May delivery. In "spot" grain, wheat and oats there close where they began, corn has fallen off, for No. 2, from 47½¢ to 45c. Good feeding barley took a wider range with brewing having a 1c higher limit in range.

LIVE STOCK AND MEATS.—Cattlemen of Haywards fear disaster. Grass, owing to lack of rains and frost, is scarcely an inch high. A writer in the Breeders' Gazette says that the season is fast approaching when small farms must take the place of large farms, and well-fed beef take the place of range-fed cattle. In 1892 we had 826 head of cattle for every 1000 of population; in 1890, only 583 head for every 1000 population, he says.

We note the following recent movements of stock: The large number of cattle brought to Kings county from Southwestern States swung the balance in favor of imports for a time this season, but it did not last long, as the shipments of horses and hogs to other points outside the State now more than counteract the other deals. Scarcely a day passes without shipments of King county stock being made, says the Hanford Journal. Ed. Udell of Dixon recently secured 200 horses from the north, which he will soon put on the market at Dixon. He tried Napa county, but the Napaites were apparently well supplied. L. E. McLellan recently shipped a carload of Tulare county bred horses to Los Angeles, and a Lompoc man has been shipping to the same market from Oregon. The Klamath Express says that "J. W. Howard took over 500 head of fine beef cattle two weeks ago from Merrill to Gazelle, and will in the next few days take two more large bands. The stock was sold to the Western Meat Co. of San Francisco." And Louis Gerber has supplied over 400 cattle and 1000 sheep from the same point to the Sacramento holiday market. In that section the outlook for early spring grass was never better and the Nevada feeders are cutting their hay-fed cattle loose, as from present indications there will be no advance in beef.

A company of capitalists has secured from the city of Oakland a franchise to operate a meat packing house at Emeryville. They paid \$50,000 for the site and will put up a \$40,000 slaughter house, which, it is expected, will be running within three months. The identity of the capitalists has not been made public.

The Cincinnati Price Current says the pack of hogs in that market is less this year by 695,000 than last. The price to dealers is moderately high, being an average of \$6.15 per 100 pounds for prominent markets, as against \$5.75 a year ago and \$4.75 two years ago.

ORANGES.—Shipments from Butte county total about 400 carloads this year. To Dec. 19 there had been sent out from Palermo 246, Oroville and Thermalito 100, Biggs 24, Gridley 2, with a few large growers having a considerable quantity on hand, and some late varieties are still on the trees, the output having a much greater variety than that from Tulare county. The above does not include scattering shipments from Yuba county and Honcut. There are also reported to be several carloads of good Navel awaiting market in Sutter county, about Yuba City. The total output of Tulare county now totals 741, and will no doubt reach 750, Porterville shipping nearly one-half. Shortness of the crop in southern California is noted by Dun's Review of Business Conditions, the Redlands Citrograph, and J. J. Cairns of Lindsay, an officer of the Exchange Marketing Agency, who recently visited southern California.

NUTS.—Wright & Corson of Lodi recently sold three carloads of "stick-tight" almonds to W. G. Read of Davisville for \$2000. He will crack them and sell the meats in San Francisco, or elsewhere.

Fullerton Walnut Association shipments for the season aggregate 117,443 pounds; received for the output f. o. b. Fullerton, \$129,898 56; expense of handling including sacks, nearly 24c per 100 lbs. The association will pay its stockholders

net for No. 1 soft shells, \$9.55 per 100 lbs.; No. 2, \$7.52; No. 1 hard shells, \$9.06; No. 2, \$7.05. The Golden Belt Company made almost as heavy shipments, and several cars were moved out independent of any association. Santa Ana Association shipments for the season were eighty cars, with about forty other carloads bought by Guggenheim & Co. of San Francisco, who, by a local agent, have twenty-five or thirty people employed at Santa Ana in preparing walnut meats for the confectionary trade of San Francisco and elsewhere.

APPLES.—Shipments of Pajaro valley apples to December 12 were 723 carloads for this season. San Francisco got over 100 carloads during November. It is expected that occasional shipments will continue until the middle of January. To December 6 exports of apples (barrels) from this country and Canada to Europe were:

	1902	1901
Liverpool.....	221,178	223,745
London.....	237,552	118,307
Glasgow.....	312,004	96,042
Hamburg.....	89,031	15,012
Various.....	54,213	3,249
Totals.....	1,613,978	468,355

There are indications of increased and new competition in these and other European markets from Russia, Algiers and Morocco, South Africa, Tasmania and Australia. Of the above shipments to Liverpool, California furnished 27,058 boxes or about 9900 barrels this year, and 12,565 boxes or about 4200 barrels in 1901.

COLUSA PRUNES NAMED.—Sun: The Colusa Prune Association has adopted "Sioc" as a brand or trademark by which Colusa prunes are to be known. Fred Wright is now fixing up some eighty packages of Colusa prunes that will go East in time for a Christmas dinner to each of the great newspapers of the United States, and there is a movement on foot to also send samples of citrus fruits and other products from various counties at the same time to the same destinations.

TO MARKET ASPARAGUS FRESH.—J. Fishel of San Francisco has proposed to pay all costs of packing, transportation and other marketing expenses of asparagus from points around Antioch, guarantee the growers 3 cents per pound and divide the difference between that and selling price equally with them, and the Antioch Ledger says "many of our largest growers have signified their intention to co-operate with him."

RAISIN ADVANCE.—Another advance of ¼c per pound has been declared by the directors of the Raisin Growers' Association on raisins of all kinds. This affects all the fruit on hand and it is estimated will mean the additional payment of from \$400,000 to \$500,000. It will probably be two weeks before the office is ready to make the final disbursements.

HAY.—It is understood that the railroads will make a special effort to provide cars after the first of the year, fruit shipments being mainly over and the holiday rush then past. Modesto and Turlock districts are reported short of hay. The Livermore Herald says there are about 1800 carloads of hay in that valley.

CELERY SHIPMENTS to Chicago from southern California during November realized at shipping point, for White Plume some 15c, best mostly 16c per dozen; Golden Heart 18¢@20c.

POTATOES.—Cold weather and low prices have operated to curtail European shipments to the United States. Fancy grade of potatoes is reported selling at Los Angeles, a week or so ago, at \$1.35¢@1.45 per cental.

San Francisco Produce Report.

SAN FRANCISCO, Dec. 23, 1902.

Knowledge of the movement of produce is given in the table below:

RECEIPTS AND EXPORTS:

Receipts of produce from California interior for week were:

Flour, sacks.....	221,847	Broomcorn, bbls.....	100
Wheat, centals.....	214,507	Hops, bales.....	32
Barley, centals.....	90,758	Wheat, sacks.....	74
Oats, centals.....	6,847	Hides, No.....	7,820
Corn, centals.....	4,290	Tallow, lbs.....	1,103
Rye, centals.....	1,135	Pelts, hds.....	6,076
Beans, sacks.....	3,627	Wine, gals.....	295,550
Hay, tons.....	2,506	Brandy, gals.....	58,380
Straw, tons.....	55	Butter, lbs.....	75,300
Potatoes, sacks.....	23,940	Eggs, doz.....	61,860
Onions, sacks.....	1,547	Cheese, lbs.....	58,000
Wool, bales.....	130		

From Oregon:

Wheat, ctls.....	2,053	Oats, ctls.....	5,003
Flour, qr sks.....	24,873	Potatoes, sks.....	3,761
Barley, ctls.....	8,260	Onions, sks.....	150

From Washington:

Flour, qr sks.....	15,032	Barley, ctls.....	20
Oats, ctls.....	8,266	Beans, sks.....	120
Flaxseed, sks.....	3,360	Feed, sks.....	445
Potatoes, sks.....	604		

From East:

Corn, centals.....	4,440		
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GRAINS, FLOUR AND FEEDSTUFFS.

In the San Francisco markets, wheat, both spot and future, has continued strong in price with no reports or rumors

of prospective conditions that would make it otherwise. The practical possession of this market by Eastern corn in the absence of Californian for the time has had a lowering effect on barley prices, and the price of new California corn depends very much upon its condition, with a tendency higher for a strictly first-class, dry lot. Quotations vary so much on corn, and especially on both kinds of Egyptian, that they are practically useless as a guide to producers, though they are not any lower for such lines as producers have. Barley prices have lowered to \$1.17½@1.20 for feed and \$1.22½@1.25 for brewing. Minimum price for rye is now quoted at \$1.12½—2½c higher than last week. Buckwheat and flour are both unchanged and feedstuffs are about the same as last week.

FEEDSTUFFS.

Millers' prices to wholesale dealers:	
Bran, ½ ton.....	18 00@19 00
Middlings.....	22 00@24 00
Shorts, California.....	19 00@19 50
Barley, Rolled.....	25 00@25 00
Cornmeal, coarse feed.....	30 00@31 00
Cracked Corn.....	30 50@31 50

HAY.

Some quotations are \$1 higher on "wheat and oat" line; but probable increase of movement makes it seem improbable that prices will go higher at present.

Choice Wheat Hay.....	15 50@16 00
Good Wheat Hay.....	14 00@15 00
Other grades same.....	11 00@13 50
Wheat and Oat.....	11 00@14 00
Tame Oat.....	10 00@13 00
Second Quality Oat.....	9 00@11 50
Barley and Oat.....	9 00@11 00
Alfalfa.....	9 00@11 50
Straw, ½ bale.....	45 @ 60

BEANS.

Receipts are light; stock mostly in dealers' hands, we believe; and dealers doing almost nothing, awaiting spring demand. Prices to growers are practically unchanged.

Prices to producers for choice round and carload lots on wharf, city:

Pea, 100 lbs.....	3 25 @3 50
Small White.....	3 15 @3 30
Lady Washington.....	2 75 @3 10
Pinks.....	2 40 @2 75
Bayos.....	2 60 @2 85
Red Kidney.....	4 00 @4 50
Limas.....	4 25 @4 35
Black-eye Beans.....	3 85 @4 10
Garbanzos, large.....	2 50 @2 85

PEAS.

Jobbing prices:	
Green Peas, California.....	1 85 @2 25
Niles Peas.....	2 50 @—

SEEDS.

Dealers here report nothing doing in alfalfa, and some of them report no stock on hand. The latter say buyers from first-hand dealers would have to pay 12c a pound.

For choice seed to producers, dealers quote:

Alfalfa, Cal.....	10 50@11 50
Flax.....	2 @ 2¼
The following are selling at:	
Broom Corn, ½ ton.....	12 00@15 00
Canary, in original packages.....	4¼ @ 4½
Rape.....	1¼ @ 2¼
Hemp.....	3¼ @ 4

POTATOES.

Jobbing prices:	
Burbanks, Salinas, ½ cental.....	90 @ 1 10
River Burbanks, good to select, ½ cental.....	40 @ 55
River Reds, nominal, ½ sack.....	40 @ 50
Merced Sweet, ½ cental.....	1 50 @—
Oregon and Yakima.....	75 @ 1 05
Early Rose.....	80 @ 90

VEGETABLES.

Commission merchants report realizing for:	
Beans, String, ½ lb.....	7 @ 10
Beans, Wax.....	7 @ 10
Cabbage, choice garden, ½ 100 lbs.....	40 @ 60
Carrots, ½ sack.....	40 @ 50
Celery, May Field, ½ doz.....	50 @—
Sprouts.....	5 @—
Egg Plant.....	10 @ 12½
Garlic, ½ lb.....	2 @ 2¼
Green Peppers, Los Angeles, ½ lb.....	5 @ 8
Onions, large select, ½ cental.....	75 @ 85
Peas, Sweet garden, ½ lb.....	5 @ 8
Squash, Summer, Los Angeles.....	1 00 @ 1 25
Squash, Marrowfat, ½ sack.....	40 @ 50
Squash, Hubbard, ½ sack.....	40 @ 50
Yellow Pumpkins, Eastern, ½ sack.....	50 @ 65
Tomatoes, ½ crate.....	75 @ 1 25

LIVE STOCK AND MEATS.

Are in good demand. Receipts of hogs moderate.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, steers, ½ lb.....	7 @ 7½
Beef, cows.....	6 @ 7
Veal, large, ½ lb.....	8¼ @ 9
Veal, small, ½ lb.....	9 @ 10
Mutton—ewes, 8@8½; wethers.....	8¼ @ 9
Lamb, ½ lb.....	9¼ @ 10
Hogs, dressed.....	8¼ @ 9¼

Dealers are quoting prices to producers for first quality live stock, less 50% shrinkage on cattle, delivered at city slaughter houses, as follows:

Cattle—Steers.....	8¼ @ 9
Cows and Heifers.....	7 @ 7¼
Thin Cows.....	4 @ 5

Calves, large.....	4¼ @ 5
Calves, light (gross weight).....	5 @ 5½
Sheep—Ewes (gross weight).....	3¼ @ 3½
Wethers.....	3¼ @ 4
Lambs, yearlings, ½ lb (live weight).....	4 @ 4¼
Hogs, hard grain fed, 150 to 250 lbs.....	6¾ @ 6¼
Hogs, small, fat.....	— @ 6¼
Hogs, large, hard, over 250 lbs.....	6 @ 6¼
Hogs, feeders.....	6 @ 6¼
Hogs, country dressed.....	9 @ 9¼

GAME.

Naturally, this week, game has taken second place and prices are lower.

Mallard.....	2 50@3 50
Sprigs.....	2 50@3 00
Widgeon.....	1 25@1 75
Small.....	1 15@1 50
Teal.....	1 00@1 25
Black Jacks.....	1 00@1 25
Hare.....	1 00@1 25
Gray Geese.....	3 00@3 50
Snipes, English.....	2 50@—
Terrapin.....	2 00@5 00

POULTRY.

Turkey receipts for Tuesday were reported at 425 tons. Trade was brisk, and apparently this market cleaned up well on this line. Most other lines were also higher.

Small broilers should weigh from 1½ to 2 lbs.; large broilers, 2 to 2½ lbs.; fryers, 2½ to 3 lbs. at the highest; all over that go as young roosters if they have no spurs and the breast bone is soft. Dealers quote prices for:

Turkeys, alive, choice young.....	18 @ 20
Turkeys, alive, Hens, ½ lb.....	18 @ 20
Turkeys, alive, Gobblers, ½ lb.....	18 @ 20
Turkeys, dressed, hens.....	20 @ 22
Turkeys, dressed, gobblers.....	20 @ 22
Hens, California, ½ dozen.....	5 00 @6 00
Roosters, old.....	4 50 @5 00
Roosters, young (full-grown).....	5 00 @6 00
Fryers.....	5 00 @5 50
Broilers, large.....	4 00 @5 00
Broilers, small to medium.....	3 00 @4 00
Ducks, old, ½ dozen.....	3 50 @5 00
Ducks, young, ½ dozen.....	4 50 @6 50
Geese, ½ pair.....	1 50 @2 00
Goslings, ½ pair.....	1 50 @2 00
Pigeons, old, ½ dozen.....	1 00 @1 25
Pigeons, young.....	1 50 @2 25

BUTTER.

From a knowledge of methods of handling butter in the East we should say that it is quite likely that there is considerable truth in the reports current during the week past of the invasion of this market by "renovated" butter from the East. It is said to be mainly from Nebraska. The Internal Revenue laws require that all packages of such butter shall be marked plainly "Renovated Butter," under heavy penalties for violation.

Commission merchants quote sales at:

Creamery, extras, ½ lb.....	20 @30
Creamery, flists.....	28 @28¼
Dairy.....	27 @28½
Store, nominal, Cold Storage.....	27 @29
Western.....	27 @29

EGGS.

Commission merchants quote sales at:

California, select, large, white and fresh.....	32¼ @35
California, select, irregular color & size.....	30 @33
California, good to choice store.....	26 @29
Eastern.....	22 @27¼

CHEESE

Commission merchants quote as returning for:

California, fancy fat, new.....	15 @16
California, good to choice.....	14 @15
California, "Young Americas".....	16¼ @—
Eastern.....	17 @17¼

HONEY AND BEESWAX.

Sales of twelve tons amber from West Butte, Sutter county, to San Francisco parties at 5½c.

The bulk of California produced honey is sold for Eastern shipment in carload lots from producing point at bottom price. Small lots of choice honey that can be used in local trade bring more. Quotations here given are current prices to producer, f. o. b. shipping point, on Eastern basis for extracted and California basis delivery point subject to agreement for comb:

Extracted, White Liquid.....	5¼ @ 7
Extracted, Light Amber.....	5¼ @ 6
Extracted, Amber.....	4 @ 4¼
White Comb, 1½ frames.....	12 @14
Light Amber.....	10 @11
Dark Comb.....	5 @ 6¼
Beeswax, good to choice, light, ½ lb.....	26 @27¼
Strictly fancy light.....	29 @30

HOPS.

Buyers are paying for:

Washington and Oregon.....	25 @26
Sacramento.....	24 @25
Russian River.....	24¼ @25
Sonoma.....	25 @27

WOOL.

It is thought that the heavy loss of sheep in Australia during the current year ensures good prices and prompt sale of domestic wools for the coming year.

Dealers' prices are:

FALL.	
Humboldt and Mendocino.....	12 @15
Mountain, free.....	10 @12
Plains, defective.....	7 @ 9

FRESH FRUITS.

Cold storage pears have sold as high as \$1.75 during the week. Best apples have moved somewhat better.

Commission merchants are realizing for:

Apples, fancy, 4-tier box.....	1 00@1 50
--------------------------------	-----------

Apples, good to choice, 50-lb. box.	60@ 85
Apples, common to fair, 50-lb. box.	25@ 50
Pears, Winter Nellis.	50@ 1 25
Pears, other kinds, 50-lb. box.	50@ 75
Persimmons, 50-lb. box or crate.	40@ 75
Pomegranates, according to box.	1 00@—

DRIED FRUITS.

Some dealers, independent of those who are said to have been combined on purchases the past summer, report selling fancy evaporated apples at 6½@7c, pears in halves at 5@9c, and white figs in bulk at 6@7c.

Jobbing quotations are:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, fancy, 7	@ 7½
Apples, standard to choice.	5 @ 6
Apples, sun-dried.	4 @ 4½
Apricots, Moorpark, choice only.	7 @ 9
Apricots, Royal, good to choice, 5 lb	6 @ 7
Apricots, Royal, fancy.	8 @ 8½
Figs, 10-lb. box.	80 @ 1 15
Nectarines, 5 lb.	5 @ 6½
Peaches, unpeeled, fancy.	7 @ 7½
Peaches, unpeeled, choice.	5 @ 5½
Pears, halves.	5 @ 10½
Plums, pitted.	5 @ 6
Plums, unpitted, 5 lb.	1½ @ 2½
Prunes, Silver, good to fancy.	4½ @ 8
Prunes, in bags, 4 sizes, 2½@3c; 40-50s, 5½@5½c; 50-60s, 4½@4½c; 60-70s, 3½@3½c; 70-80s, 2½@3; 80-90s, 2½@2½c; 90-100s, 1½@2c.	
Figs, White, in bulk.	6½ @ 7
Figs, Black, in sacks, 5 lb.	4½ @ 5½

CITRUS FRUITS.

Latest auction sales have shown somewhat lower prices on fancy navel than the figures named below, but otherwise prices realized have been quite up to quotations on commission goods.

Commission prices:

Oranges, Navels, fancy, 50 box.	2 00@2 50
Oranges, Navels, choice.	1 25@1 75
Oranges, Seedlings.	75@1 25
Tangerines, according to box size.	75@2 00
Jaffas.	1 25@1 50
Lemons—California, fancy, 50 box.	2 00@2 50
California, choice.	1 25@1 50
California, standard.	75@1 00
Limes, Mexican, 50 box.	4 00@4 50
Grape Fruit.	2 00@3 00

NUTS.

Jobbing prices are:

California Almonds, shelled.	25 @26
California Almonds, paper shell, 5 lb.	11¼@12¼
California Almonds, soft shell.	9¼@10
California Almonds, hard shell.	7¼@ 7½
Peanuts, California, fair to prime.	5 @ 6
Peanuts, Eastern, hand-picked.	5 @ 7
Walnuts, soft shell, 5 lb.	11 @13
Walnuts, standard, 5 lb.	9¼@11¼

OTHER LINES

On which quotations are usually given show no appreciable change.

THE TRUE POLICY.—Wm. E. Smythe says that the bill prepared by the committee of the Water and Forest Association should not be passed, because it provides for an army of petty administrators appointed by the State to distribute the water, instead of leaving such matters in the hands of the people, for one reason. He says: "There is another policy upon which all supporters of irrigation should unite. That is to secure the prompt re-enactment of what is known as Senate Bill No. 7, providing for an appropriation of \$200,000, one-half from the State and one-half from the Nation, to be used in measuring streams, exploring reservoir sites, and developing a forestry plan suited to the needs of the State. Both political parties have declared emphatically for this measure. Let the engineers of the national government proceed to perform the most important work which would have fallen to the Board of Engineers provided for in the Water and Forest Commission. Thus we shall gain the best advantage which that measure would have given us, and avoid the many serious dangers it contains, while preventing the closing of the door to public irrigation works and turning over our water resources to promoters and speculators."

ABOUT WATER IN CENTRAL DISTRICT.—Willows Journal: W. H. Chamberlain, the well known San Francisco attorney, has been doing good work explaining to the land owners throughout the district the plans proposed. The plan, in a nutshell, is to "get together;" to agree upon a certain valuation of the irrigation district bonds; and he promises that when this understanding is arrived at, a powerful and wealthy syndicate, the members of which are men of high standing, will agree to take up these bonds and make irrigation a living reality. The company will then furnish water to land owners at a very reasonable figure. Judge S. C. Denson and J. N. Williams are interested with Mr. Chamberlain.

WIDENING SACRAMENTO SLOUGH.—E. J. Tharp's suggestion to that effect is favorably received. Commissioner Ryan of the State Board of Public Works says that the board will, no doubt, consider the suggestion after disposing of the problems now before it.

LAND SUBDIVIDING.—Dixon Tribune: The era for which many in this community have hoped is apparently at hand. L. S. Hyde has bought forty acres of the T. T. Eibe part of the Currey lands and will begin immediately the installation of an electric power irrigating plant for alfalfa. This year Mr. Hyde cut five crops of alfalfa from the Timm land, averaging \$75 per acre for this year's yield, at a cost of \$2 per acre for irrigating with a gas-line plant for one year.

OLIVE OIL.—Alta Advocate: W. B. Nichols, whose "Sunset" olive oil product is getting quite a local fame, has purchased all the olives in the Alta Irrigation district, quite a quantity from Exeter and five tons from Merced. His plant will use this season about forty tons of the fruit; he has already pickled 2500 gallons, and estimates his oil yield at 1000 gallons. His plant is now running night and day.



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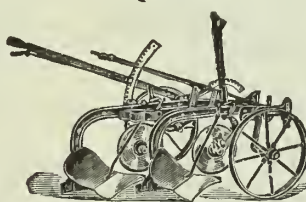
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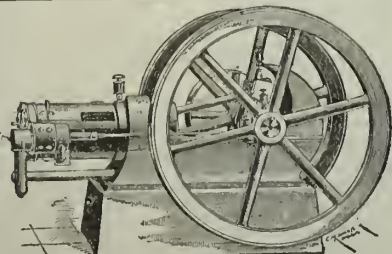
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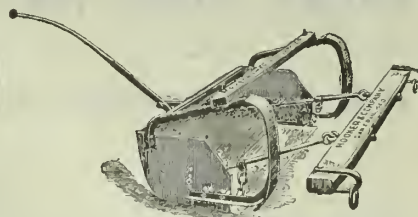
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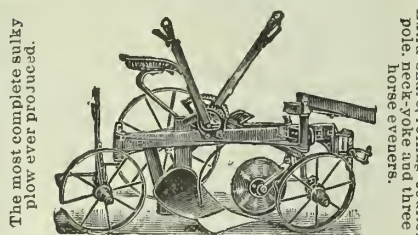
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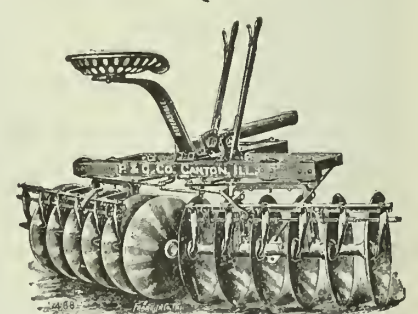
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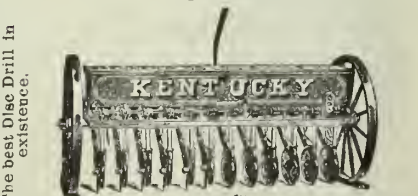
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